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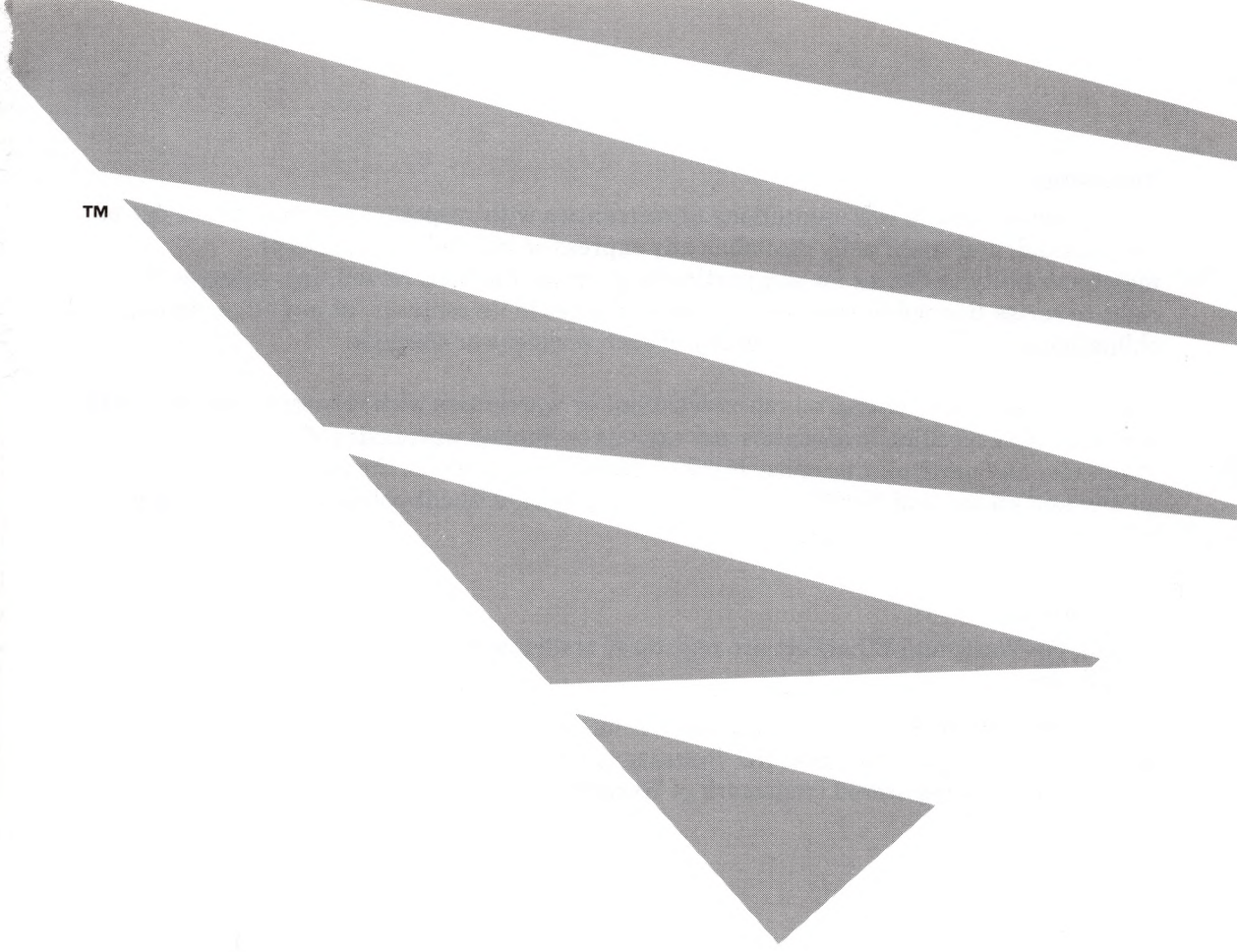
Basic Operations

NetWare®

FOR MACINTOSH VERSION 2.2



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About this guide

This guide covers basic operations you can perform with NetWare for Macintosh v2.2. By reading this guide, you should learn all the important skills, terms, and concepts you need to work on a NetWare file server from your networked Macintosh.

Who should read this guide

This guide is written for a Macintosh user whose Macintosh is connected to a NetWare **local area network** (LAN). In general, you can use NetWare to share files, send messages, and print to a shared Apple LaserWriter or ImageWriter. If the NetWare LAN includes IBM PC-compatible systems, you can access the same documents on the file server from a Macintosh or a DOS computer. (Of course, to access the same file from a Macintosh or a DOS system, the application you use must support both DOS and Macintosh file formats.)

This guide assumes that a NetWare LAN has been installed and that the **network administrator** has created both a **user name** and **work area** for you on the file servers you need to access. It also assumes that the network administrator has established NetWare print queues and connected them to Apple printers. These installation tasks are described in NetWare for Macintosh v2.2 *Installation and Maintenance*.

This guide also assumes that the network administrator has installed the Macintosh software you need, including the **NetWare desk accessory** (DA). You can verify that the DA is installed by choosing NetWare from the Apple (🍎) menu. Installation

instructions for the NetWare DA can be found in Appendix C of this guide.

This guide also assumes that you have basic Macintosh skills. If you are not familiar with Macintosh skills and terminology, please refer to your Macintosh *User's Guide*.

Note: Example illustrations in this guide assume that you are logging in to a NetWare v2.2 file server. If you are logging in to any other kind of NetWare server, the way security works may be different than the system described in this manual. Please see Appendix B on page 77 for details about working with security on other kinds of NetWare servers.

How to use this guide

This guide is organized as a step-by-step introduction to the NetWare environment.

- Chapter 1, "Getting Started," explains how to perform everyday tasks on your Macintosh such as logging in and logging out, accessing **volumes**, and working with **folders** and files.
- Chapter 2, "Working on a NetWare **File Server**," tells how to perform basic operations with folders and files and provides all the basic security knowledge most users need to start working with their personal files on a NetWare server.
- Chapter 3, "Printing with NetWare Queues," tells how to send print jobs to a NetWare print queue and use the NetWare desk accessory's **Print Queue module** to monitor print queues.
- Chapter 4, "Sending and Receiving Messages," tells how to use the NetWare desk accessory's **Message module** to send and receive short messages.
- Chapter 5, "Setting NetWare Security Rights," tells how to change folder and file security with the NetWare DA's **Rights module** so you can share (or not share) your work with other network users.

- Chapter 6, "Help with Problems," provides help with problems you might encounter.
- Appendix A, "NetWare Security Concepts," describes how your security rights are calculated.
- Appendix B, "Working on a Mixed Network," tells about NetWare security for the NetWare v2.15 and NetWare v3.*x* servers. This information is useful if you are working on a "mixed" network from which you can access these different kinds of NetWare servers.
- Appendix C, "Installing the NetWare DA," tells how to install this desk accessory and its related software.
- Appendix D, "DOS Filenaming Conventions," tells how to name your Macintosh files and folders so that their names won't be changed when they appear in a DOS directory.

You will find a Glossary and an Index at the back of this guide.

Standards and conventions used in this guide

This guide uses **boldface** type to introduce new terms. *Italics* are used in the text indicate emphasis; they are also used for the names of products, diskettes, and manuals.

Chapter 1. Getting started

In this chapter you will learn how to log in and out of a NetWare file server and open a volume on your Macintosh desktop.

This chapter assumes that a network administrator has installed the required client software (*AppleShare Workstation* software) and has verified the system software and network connection to the NetWare file server.

Logging into a NetWare file server

To log in, you need to know the name of the file server, your assigned user name and password on the file server, and in some cases, depending on the network configuration, the file server's AppleTalk zone.

1. **Select Chooser from the Apple (🍎) menu.**

   The Chooser dialog box will appear (FIGURE 1-1).

2. **Click the AppleShare icon in the Chooser dialog box.**

   If the file server's name appears in the "Select a file server" list, proceed to step 4. If the server's name does not appear (or if no server name appears), select a zone first (step 3).

3. **Choose an AppleTalk zone.**

   If there are AppleTalk zones configured on the network, a list of zones will appear in "AppleTalk Zones" list. Choose the zone in which the file server resides, then proceed to step 4.

4. **Select a file server by name.**

   The names of all available file servers in the selected zone (or on the network, if there are no configured zones) will appear in the "Select a file server" list. Select a name by clicking once.

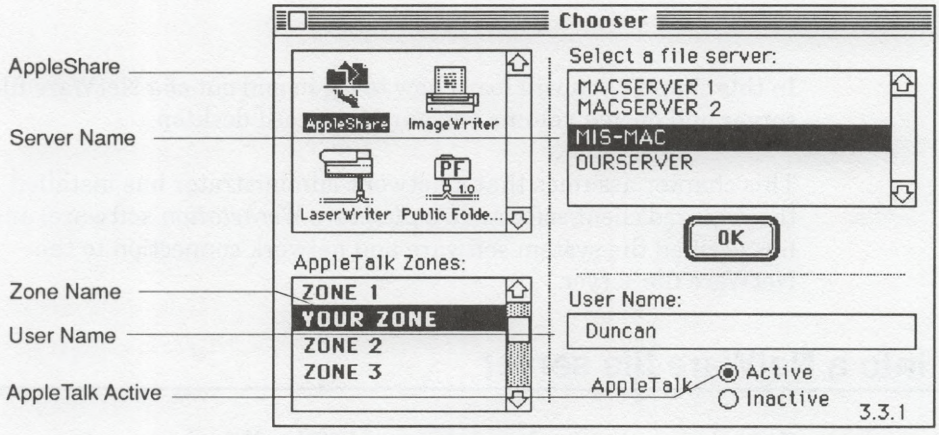


FIGURE 1-1 Choosing a server connection

5. **Check that your user name is correct for the file server.**

   If your user name on the NetWare file server is different from the user name in the Chooser, you can type your NetWare user name here, or you can wait and type it in the AppleShare connect box (FIGURE 1-2), which appears when you click OK.

6. **Make sure the AppleTalk Active button is selected.**

   Click the button next to "Active" to turn on AppleTalk. If "Inactive" is selected instead, a dialog box asking if you want AppleTalk turned on will appear when you try to log in. If this dialog box appears, click OK to make AppleTalk active.

7. **Click OK or press <Return>.**

The AppleShare connect box will be displayed.

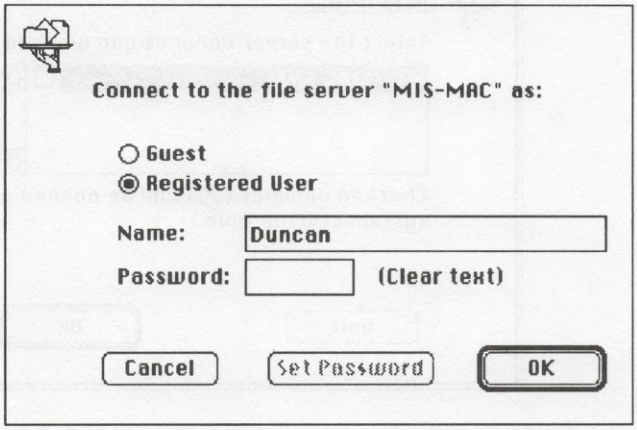


FIGURE 1-2 The AppleShare connect box

8. **Enter your password.**

A **password** is a code that is eight characters or less. The network administrator usually assigns a temporary password to each user to protect the file server before you log in for the first time, although some sites might allow you to log in initially with no password. Please see "Changing your password" on page 6 to learn how to assign your own password, which will be known only to you.

If you don't know your password, check with the network administrator. On some NetWare file servers, you can log in with a limited set of security rights by clicking the **Guest** button, and then clicking OK.

As you type, your password is displayed as a row of bullets. You can type you password in either upper or lower case characters. Click OK to enter your password.

After you log into the file server, the Volume dialog box opens.

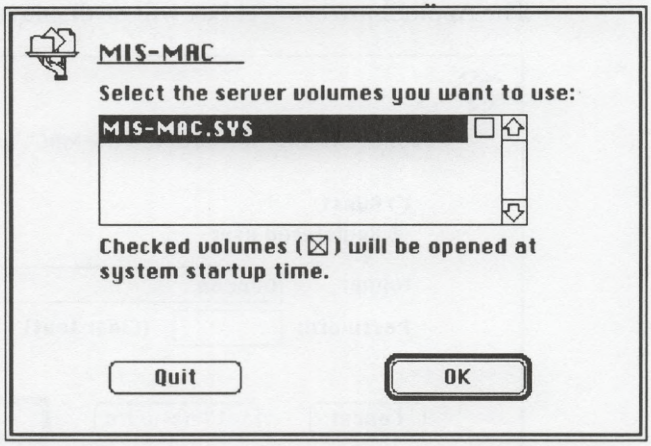


FIGURE 1-3 The Volume dialog box

A file server's disk storage is divided into **volumes**. Each volume is like a separate hard disk that you can choose to **mount** (install) on your local Macintosh desktop. After you mount a file server volume, you can open it and work on it as if it were a local hard disk (see "Opening a volume on the file server" on page 7).

9. **Select a volume, for example, the SYS volume, and click OK.**

   Click once on the volume name to select it. You can shift-click to select more than one volume at a time.

   Notice that the name of the file server you are accessing appears in the upper-left corner of the dialog box. The scroll box lists each server volume by name. If a volume name is dimmed, you either don't have rights in that volume or you have already accessed it.

10. **Close the Chooser.**

    When you have logged into the file server and selected a volume to open, close the Macintosh Chooser. You can close the Chooser by selecting Close from the File menu, or you can click the close box.

Note: If you close the Chooser without selecting a volume, you will not be logged into the file server.

Volume Icon

After you close the Chooser, the NetWare **volume icon** appears on the Macintosh desktop. See "Opening a volume on the file server" on page 7 for an introduction to NetWare volumes.

Choosing to install a NetWare volume automatically at start-up

If you click the selection box next to a volume name in the Volume dialog box, the volume will be installed on your desktop every time you start up the Macintosh. When you click the selection box, the extra fields "Save My Name Only" and "Save My Name and Password" will appear in the box shown in FIGURE 1-4.

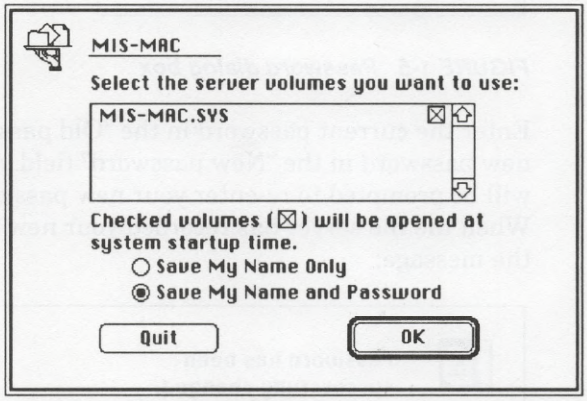


FIGURE 1-4 Volume dialog box with volume checked

If you choose "Save My Name Only," the system will prompt for your password when it is automatically installing the volume.

Note: If you choose "Save My Name and Password," anyone will be able to restart your Macintosh and automatically log into the file server with your user name. This gives open access to all of your data on the file server, and is usually not recommended.

Changing your password

If you are able to log in without a password, or if the network administrator gave you a temporary password, it is important that you choose a new password known only to you and set it on the file server. The password you choose must be eight characters or less, and should be a code that you can easily remember but other users cannot easily guess.

To assign a new password click the Set Password button in the AppleShare connect box (FIGURE 1-2 on page 3). This opens the Password dialog box.

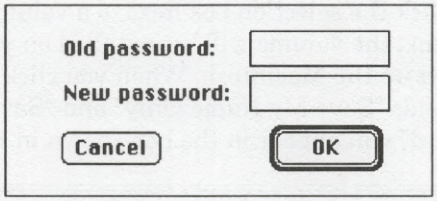


FIGURE 1-5 Password dialog box

Enter the current password in the "Old password" field, and your new password in the "New password" field. After you do this, you will be prompted to re-enter your new password for confirmation. When the file server has recorded your new password, you will see the message:

FIGURE 1-6 Successful password change

From then on, the file server will require your new password before letting you log in.

Checking your Macintosh system clock

Both the Macintosh and the file server keep track of the time and date and use it to record when files are created and modified. It is a good idea to check that your Macintosh clock is set correctly so that the correct file modification information is set when you copy local files or folders to a NetWare file server.

To set the Macintosh clock, open the Control Panel, select the "General" icon, and click on the time or date.

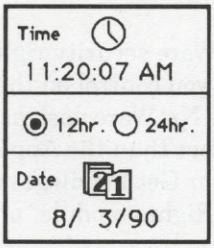


FIGURE 1-7 Macintosh clock in the Control Panel

Opening a volume on the file server

After you have logged into the file server, you are ready to open its volumes and begin to work. A volume icon looks like a filing cabinet with an open drawer.

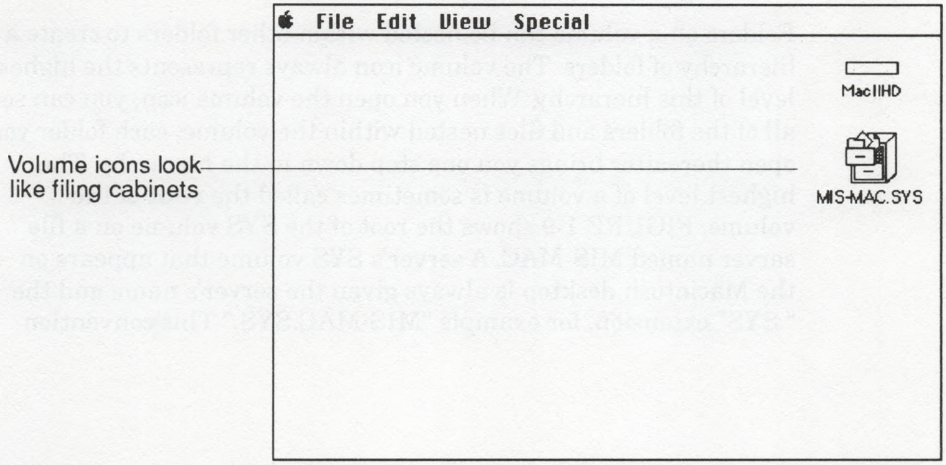


FIGURE 1-8 Volume icon on a Macintosh desktop

To open a file server volume, double-click its icon.

A note about file server security

If you are unable to open a volume by double-clicking its icon, or if you are unable to perform any of the other tasks described in the remainder of this chapter, it is probably because you do not have security permission to do so. See your network administrator if you need assistance gaining access to a volume or to folders and files on the NetWare file server.

If you wish to change NetWare security rights on your personal folders or on other folders you control on the file server, it is important that you use the NetWare desk accessory's Rights module in the Apple (🍎) menu rather than the AppleShare **Access Privileges** (Apple menu) or Get Privileges (File menu) commands. Please see "Accessing the Rights module" on page 38.

How NetWare volumes are organized

The number of volumes that are available to you depends on how the network administrator has organized the disk space on all NetWare file servers on the network. The first volume of every NetWare file server is named SYS. A server can also have additional volumes with other names, but the volume named SYS is a requirement.

Folders on a volume can be nested within other folders to create a hierarchy of folders. The volume icon always represents the highest level of this hierarchy. When you open the volume icon, you can see all of the folders and files nested within the volume; each folder you open thereafter brings you one step down in the hierarchy. The highest level of a volume is sometimes called the **root** of the volume. FIGURE 1-9 shows the root of the SYS volume on a file server named MIS-MAC. A server's SYS volume that appears on the Macintosh desktop is always given the server's name and the ".SYS" extension, for example "MIS-MAC.SYS." This convention

provides distinctive names for the windows (and icons) of SYS volumes on different file servers.

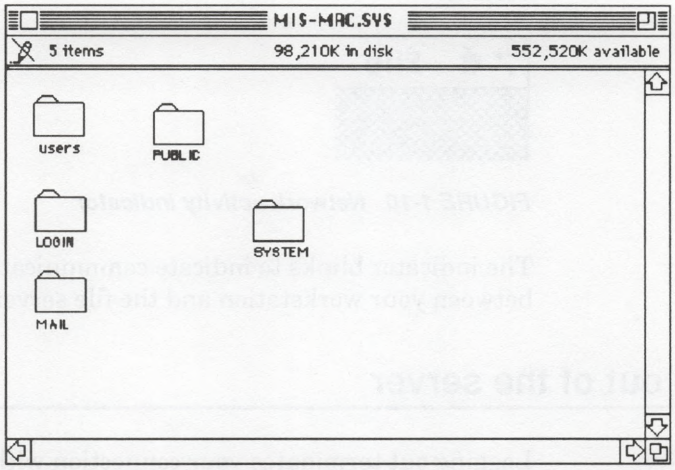


FIGURE 1-9 A sample SYS volume

The SYS volume contains some standard folders that help organize NetWare system files. These standard folders include the LOGIN, MAIL, PUBLIC, and SYSTEM folders.

The network administrator usually creates other folders at the root of a volume, for example, a USERS folder. The USERS folder typically contains a personal "home folder" for each user. This folder is your own work area. Unless you choose to grant other users access to your work area, only you and the network administrator can access this folder. In Chapter 5 you will learn how to share your work with others by granting them access to your folders.

The network activity indicator

Whenever the Macintosh is actively communicating with a file server, you will see the **activity indicator** displayed in the upper-left corner of the screen next to the Apple (). The two arrows of the activity indicator represent data sent back and forth between your

workstation and the file server. You will first see the indicator after you have successfully logged into a file server and selected a volume.

FIGURE 1-10 Network activity indicator

The indicator blinks to indicate communication is taking place between your workstation and the file server.

Logging out of the server

Logging out terminates your connection with the file server. When you are finished working on a file server, you should log out by dragging all the volume icons for that file server to the Trash icon on the Macintosh desktop.

Don't worry; dragging volume icons to the Trash does not delete any files. To delete a file, you must drag a file icon to the Trash.

Chapter 2. Working on a NetWare file server

This chapter describes how to perform basic operations on a NetWare file server, such as creating folders and files, opening and closing folders, and modifying files. In this chapter you will also be introduced to NetWare security by learning to recognize which folders are available for you to open.

Except for the access restrictions created by security rights, folders and files stored on the NetWare file server are handled in much the same way as if they were on your Macintosh. As long as you have the required rights, you can create, open, update, and copy your folders and files as you usually would.

Opening your home folder

In "How NetWare volumes are organized" on page 8 you learned about the USERS folder, which contains a home folder that is a personal work space for each user. Normally a home folder's name is a user name.

You open a folder on the NetWare file server by double-clicking it, just as you would on the Macintosh local disk. To open the USERS folder, double-click the folder.

Inside the USERS folder you should find a plain folder (probably with a black tab) with your user name, as well as gray folders for other NetWare users.

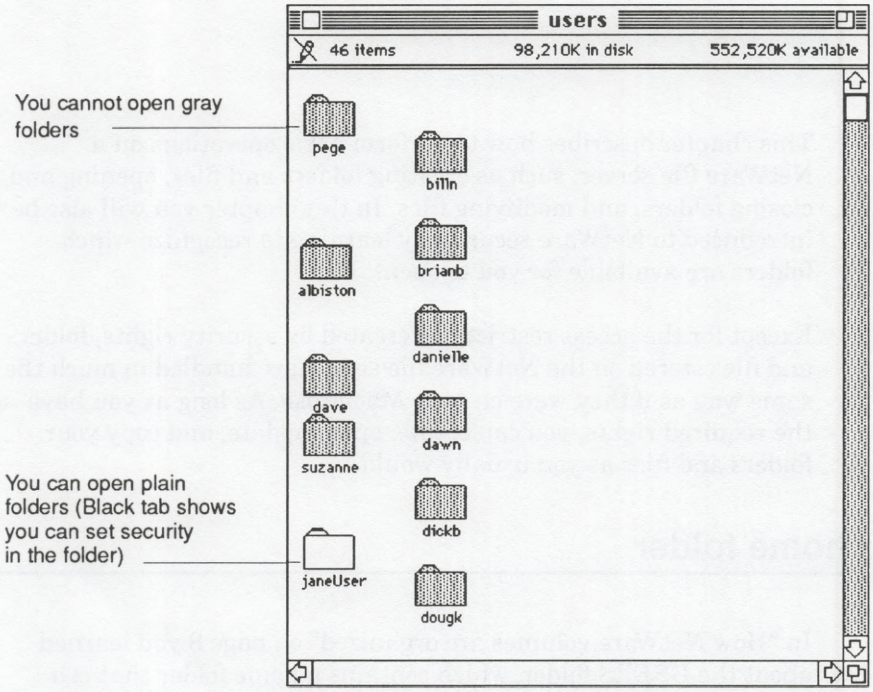


FIGURE 2-1 Sample contents of a USERS folder

If a folder is gray, you do not have the security rights to open that folder. You can open plain folders, and you can set security rights on any folders with a black tab. Your network administrator has probably set up the USERS folder so that your folder has a black tab. Later in this chapter you'll learn more about accessing folders. Setting security rights on folders is described in "Sharing your folders with other users" on page 41.

Double-click your home folder to open it.

Creating folders and files

NetWare security rights can be set to allow you to open a folder without allowing you to create any new folders or files inside it. However, your home folder should allow you to open and create new

folders and files within it. To create a folder on the file server, choose the New Folder command from the File menu. An empty folder will appear inside your home folder.

To create a file on the file server, open a Macintosh application and choose "Save As..." from the File menu. In the Save dialog box, make sure the Drive is set to the NetWare volume, and the path is set to your home folder, then save the new file by assigning it a file name and clicking Save.

Naming folders and files

You can name your folders and files on the NetWare file server just as you would on your Macintosh local disk.

However, if you plan to share your data with DOS workstation users, you should be aware of DOS filename restrictions. If the file or folder name you assign is longer than eight characters (or eleven characters, including the three-character extension), or if it contains certain special characters, DOS users will see the folder or file with a different name than Macintosh users. Please see "Working on a mixed network" on page 77 to learn how to name your folders and files so their names won't appear changed on a DOS workstation.

Opening Macintosh folders and files

You open a folder on the NetWare file server by double-clicking it, just as you would on the Macintosh local disk. You can also open a file on the NetWare file server as you would on the Macintosh local disk—you can open it from within the Macintosh application or you can double-click the file's icon to open both the application and the file.

However, if you double-click the file's icon, the Finder searches for the application on the local Macintosh disk(s) and all the open NetWare volumes. For this reason, when the Macintosh application is stored on a NetWare volume, it can be faster to open the application first and open a file within the application.

Opening DOS directories and files

FILENAME.EXT

DOS directories look like Macintosh folders and can be opened by double-clicking the folder icon. Because both Macintosh and DOS workstations can store files on a NetWare volume, you might see DOS files inside some folders. DOS files are represented by a DOS file icon.

If a Macintosh application is designed to read the format of a particular DOS file, you can open that DOS file from within the Macintosh application. This depends on both the application that created the file and the application that is attempting to read the file. *WordPerfect* files, for example, can be read by *WordPerfect* for Apple and *WordPerfect* for DOS. If you try to open a DOS application from your Macintosh, an error message may appear saying that an application could not be found for the document.

Although you can't open DOS files without the appropriate software, you can use the NetWare DA on a DOS folder to check your security rights on the DOS files.

Copying folders and files

You can copy folders and files between your local disk and a NetWare volume by dragging the folder or file icon to the volume, or to a specific folder on the volume. If you are unfamiliar with copying folders and files on the Macintosh, please see your Macintosh *User's Guide*.

You can also open several NetWare volumes at a time (assuming that you have security rights to do so) and copy folders and files between the NetWare volumes. This is done just as you would copy folders and files between Macintosh disks—by dragging the items across the desktop to a different volume.

You cannot move items out of the volume and leave them on the Macintosh desktop (the area that is not in any window). If you try to do this, an error message appears.

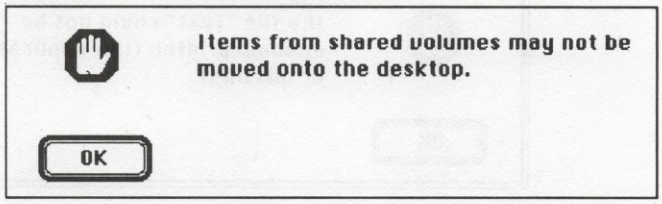


FIGURE 2-2 Desktop error message

Instead, you must always copy items from a NetWare server to a window (an open disk or a folder) on the Macintosh.

Modifying files on the file server

NetWare has many security features that govern what a user can do with files in any given folder. For example, modifying a file's name and modifying its content are two different activities, each controlled by a different right. In most cases, if you can't perform a certain task, you probably lack sufficient rights in the folder.

If you have permission to open a file, but not to modify it, you can try copying the file from the server to your local drive and modifying it there.

Using Macintosh applications on the file server

You can use Macintosh applications stored on volumes the same way you would use them if they were stored on your Macintosh. However, if you open an application by double-clicking a file icon, the Finder searches for the application on the local Macintosh disk(s) and all the open NetWare volumes. For this reason, when the Macintosh application is stored on a NetWare volume, it can be faster to open the application first and open a file within the application.

In many cases, the network administrator creates a Macintosh application folder to store applications. In that case, you open the Macintosh application folder by double-clicking it, and double-click the application to launch it.

If an application that is not intended to be shared is already in use when you open it, you will see an error message, for example:

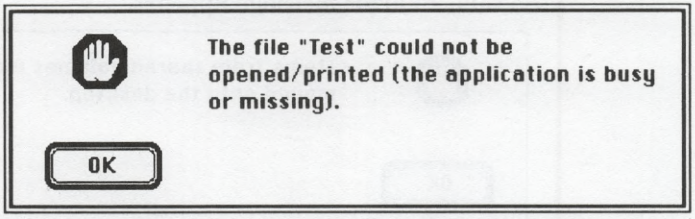


FIGURE 2-3 Application busy

If you want ready access to an application that can't be shared on the network, you should obtain your own copy and store it locally or in a protected folder on the network file server.

Another reason you might see the message shown in FIGURE 2-3, it that the application is missing. Or, you might see the message if you are trying to open a DOS file on your Macintosh and the Macintosh can't "find" the application because it is a DOS application.

You might also have problems accessing an application if it is stored in a folder in which you do not have sufficient rights. This could make it impossible for you to access the application, or you might be able to access it but find that you cannot create, see or modify files. Talk to your network administrator about granting you access to the folder, or moving the application to a public area. (Of course, whether this is possible may depend on how the application is licensed to your organization.)

Security icons

NetWare provides an extensive, flexible security system that is managed by the network administrator, while still allowing users to set security in their own folders. The security system controls who can access folders and protects users' work from intruders.

As a NetWare user, you will rely most often on folder icons and access privilege icons to learn about the rights you have in a folder.

These icons offer a quick, symbolic way of conveying a lot of security information. FIGURE 2-4 shows some folder icons on a Macintosh desktop.

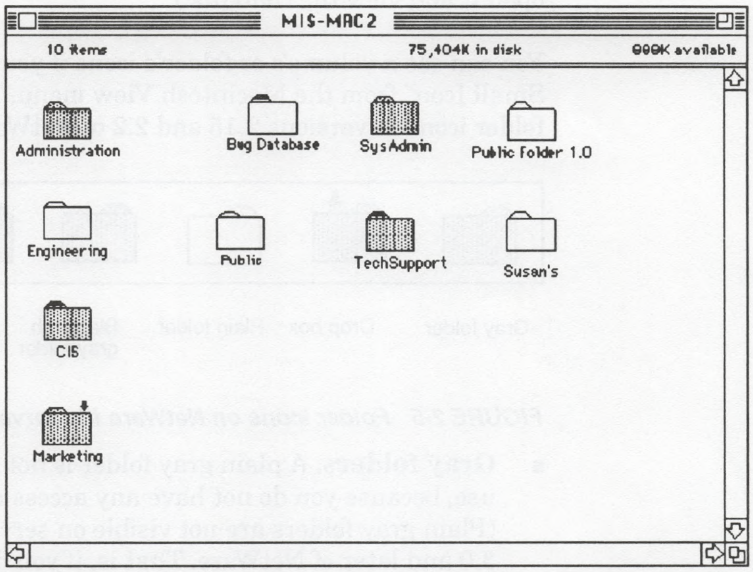


FIGURE 2-4 An open volume window showing folder icons

Using folder icons on a NetWare file server

When a folder has a black tab on the icon, it means that you have the right to change security on that folder. Please see "Sharing your folders with other users" on page 41 for information on using the NetWare desk accessory to change security rights on a folder.

When a folder is gray, it means that you cannot open that folder and view its contents. (Of course, if the folder also has a black tab, it means that you can change the security rights so you are allowed to open it and view the contents.)

You can see a volume's or folder's icons if you select "by Icon" or "by Small Icon" from the Macintosh View menu. There are six different folder icons in versions 2.15 and 2.2 of NetWare:

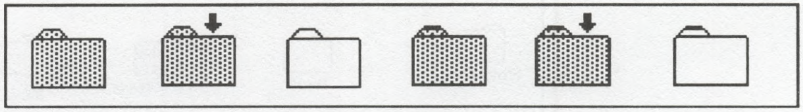


FIGURE 2-5 Folder icons on NetWare file servers

- **Gray folders.** A plain gray folder is not available for you to use, because you do not have any access rights to the folder. (Plain gray folders are not visible on servers running version 3.0 and later of NetWare. That is, if you do not have rights to a folder on a server under NetWare v3.0 or later, you will not be able to see it.)
- **Drop box folders.** These are gray with a black arrow above them. You can copy folders and files into a drop box folder, but you can't open it. These icons do not exist on a server running version 3.0 or later of NetWare.
- **Plain folders.** You can open a plain folder and see the names of the files and folders it contains. Depending on what rights you have, you may or may not be able to actually change the contents of the folder.
- **Black tab gray folders**. You cannot see the contents of a black tab gray folder, but you can change its security
- **Black tab drop box.** These are functionally the same as the drop box folders described above. However, the black tab indicates that you have the right to change access to these folders.

- **Black tab plain folders.** A black tab means that you can modify the folder's security. For instance, you could use the NetWare desk accessory to allow other users access to the folder. You will also be able to open this folder and see the names of the files and folders it contains.

Using the access privilege icons

In addition to folder icons, the Finder might display the AppleShare **Can't See Documents** or the **Can't Make Changes** icon in the upper-left corner of the window of an open folder or volume (below the title bar and to the left of the information about the folder contents):

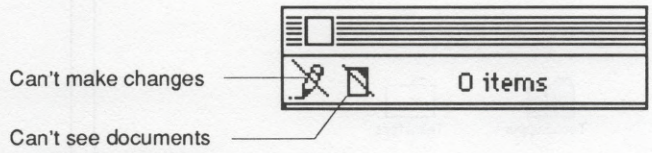


FIGURE 2-6 Access privilege icons

These **access privilege icons** also provide information about your access rights to a folder or file.

- **Can't make changes.** When you see this icon, it means you can't edit, delete, or rename any files within a folder.
- **Can't see documents**. When you see this icon, it means you can't read any documents (files) in the folder. Depending on your rights, you might be able to see files inside the folder, but you won't be able to open them.

Example 1: Which folders you can open

Assume you have just logged into a NetWare file server and opened a NetWare volume called "MIS-MAC.SYS" for the first time. Right away, you will know which folders you can open and which you cannot:

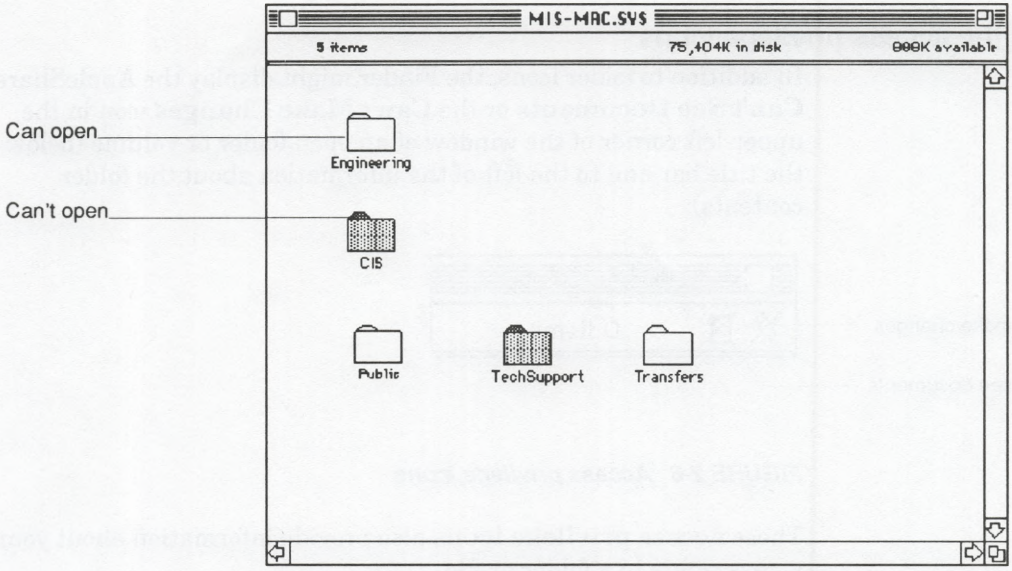


FIGURE 2-7 Folder icons indicate access rights

Remember, you can open plain folders; you can't open gray folders. If you double-click a gray folder, you will see the following error message:

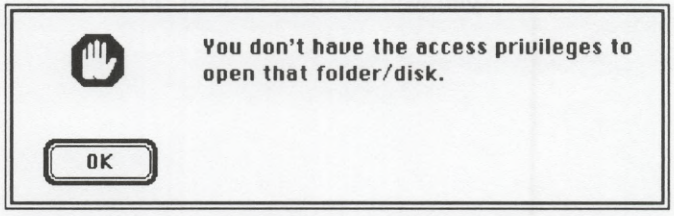


FIGURE 2-8 Access privilege error message

If you double-click a plain folder, a list of its contents will be displayed.

(On a server running version 3.0 or later of NetWare, you will not see any plain gray folders. Instead, if you do not have access rights to a folder, the folder will be invisible.)

Example 2: Using a drop box folder

Your manager has created a "Suggestion Box" for employees to enter their ideas (in confidence, of course) about your group's next project. She told you to place your ideas in the volume MIS-MAC2's drop box folder. All users will be able to copy their files into this folder, but only your manager will be able to open it.

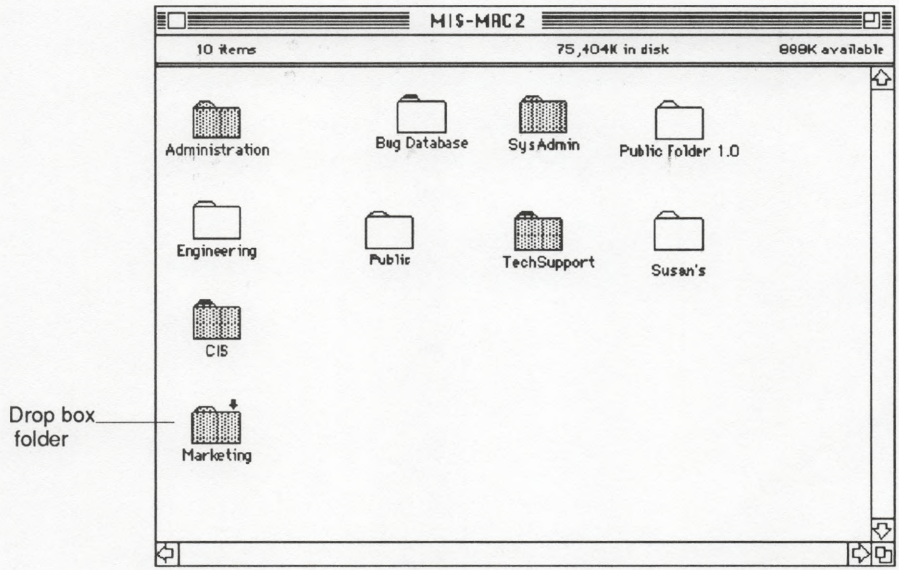


FIGURE 2-9 Looking for a drop box folder

Remember, a drop box folder has a black arrow over it. In this example, the folder "Marketing" is the drop box folder.

Chapter 3. Printing with NetWare queues

In this chapter you will learn how to send a print job to a NetWare print queue. You will also learn how to use the NetWare desk accessory's Print Queue module, which lets you monitor your jobs in a print queue.

How NetWare print queues work

NetWare allows you to submit print jobs to a queue, which stores print jobs from NetWare users and sends them to the printer on a "first-come, first-served" basis. NetWare print queues accept your print job very quickly, freeing your Macintosh keyboard so you can continue with your work.

NetWare for Macintosh supports print queues that send jobs to Apple LaserWriters and Apple ImageWriters. The network administrator creates a queue and assigns one of these types of printers to accept jobs from that queue.

Usually a print queue name will indicate the printer to which it is attached. If you have any questions about which queue to use to access a particular printer, you need to contact the network administrator.

Sending a print job to a queue

Using a NetWare print queue is very similar to sending a print job directly to a LaserWriter or ImageWriter. You select the queue in advance by using the Chooser, and then print as you normally would from within an application. Your print jobs are automatically sent to the print queue you selected until you open the Chooser again and select another queue or printer.

After the network administrator has verified that your Macintosh is running the *LaserWriter* or *ImageWriter* software, you can print to a NetWare print queue by following the steps below.

1. **Select Chooser from the Apple (🍎) menu.**

   The Chooser dialog box will appear.

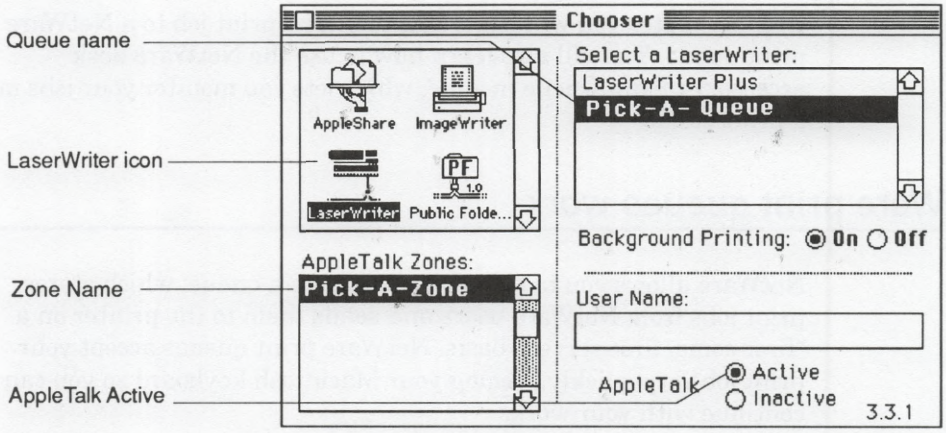


FIGURE 3-1 Selecting a queue in the Chooser

2. **Click the LaserWriter (or ImageWriter) icon in the Chooser dialog box.**

   If the queue name appears in the "Select a LaserWriter" list, proceed to step 4. If the queue name does not appear, you might need to select a zone first (step 3).

3. **Choose an AppleTalk zone.**

   If there are AppleTalk zones configured on the network, a list of zones will appear in "AppleTalk Zones" list. Choose another zone in the list until you see the queue name, then proceed to step 4.

4. **Select a print queue.**

   The names of all available print queues in the selected zone (or on the network, if there are no configured zones) will appear in the "Select a LaserWriter" list. Select a name by clicking once. You can select only one queue.

If you also see printer names in this list, it means that you can print directly to the printer or use the queue. Using the queue will free up your keyboard more quickly.

5. **Make sure the AppleTalk Active button is selected.**

   Click the button next to "Active" to turn on AppleTalk.

Note: You can elect to have Background Printing on or off. Either way, your job will still be sent to the queue you selected.

---

6. **Close the Chooser.**

   When you have selected a print queue, close the Macintosh Chooser. You can close the Chooser by selecting Close from the File menu, or you can click the close box.

   Your selection is saved, and your print jobs will be submitted to that queue whenever you print a document. You can change your queue selection anytime you want by using the Chooser.

Viewing a NetWare print queue

You can use the NetWare desk accessory's Print Queue module to view NetWare print queues.

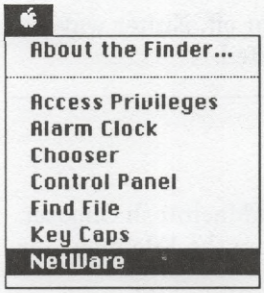
You will probably find this module most useful when you suspect your print job is held up and you want to check its status. If you have been designated as a **print queue operator** (or if you have supervisor privileges on the file server), you can also use the print queue module to delete, postpone, continue, and change the sequence of print jobs.

Opening the NetWare DA print queue window

The steps in this section describe how to open a print queue window in the NetWare DA. You can then view the contents of the print queue and see the status of your print jobs.

Note: You need to be logged into a server in order to view a queue. If you are not logged into a server, you can select the Print Queue module, but you will *not* be able to see any queues.

1. **Select NetWare from the Apple (🍎) menu.**



This opens the NetWare DA main window. The left side of the window contains module icons. The About module, which shows a brief description of each NetWare DA module, is automatically displayed.

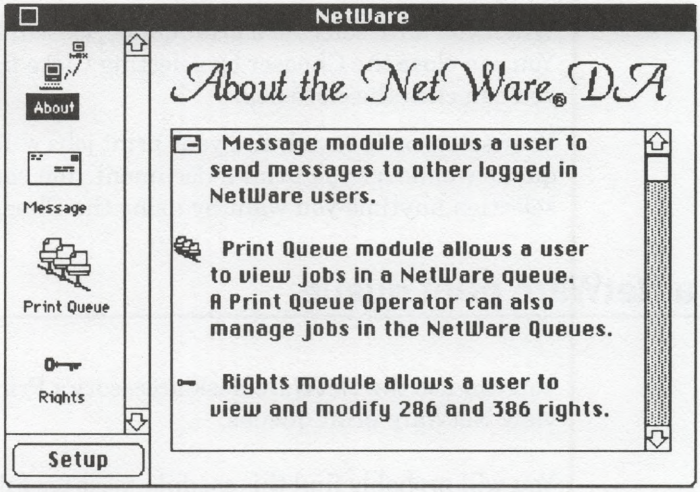

NetWare
About
Message
Print Queue
Rights
Setup
About the NetWare® DA
Message module allows a user to send messages to other logged in NetWare users.
Print Queue module allows a user to view jobs in a NetWare queue. A Print Queue Operator can also manage jobs in the NetWare Queues.
Rights module allows a user to view and modify 286 and 386 rights.

FIGURE 3-2 The NetWare DA main window

2. **Click the Print Queue icon.**

This opens the print queue window. A queue from the current server will be displayed.

- You can use the "Print Queues" pop-up menu to select another queue from the current server. (FIGURE 3-3 shows the "Print Queues" menu pulled down.)

- If you are logged into more than one server, you can select another server from the "Servers" pop-menu at the bottom of the screen.

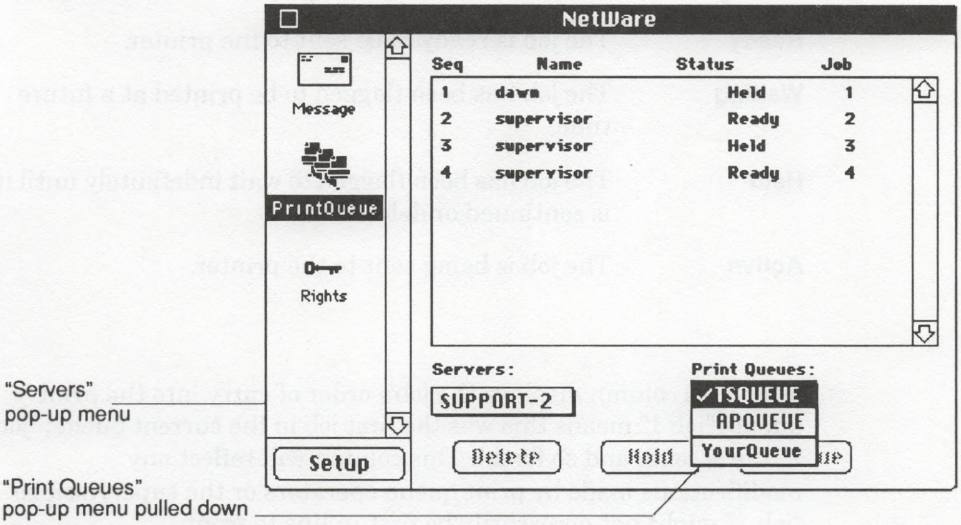


FIGURE 3-3 The NetWare DA with the Print Queue module selected and "Print Queues" pop-up menu pulled down.

The three buttons at the bottom of the window (Delete, Hold, and Continue) are dimmed unless you are a Print Queue Operator and have selected a job in the queue.

Learning about queued print jobs

The print queue window contains four columns of information: "Seq" (sequence), "Name," "Status," and "Job."

Seq. This column reports the actual sequence in which jobs will be printed (SEQ 1 will be printed first, SEQ 2 second, and so forth).

Name. This columns reports the banner name of a job. If your job is being printed on a LaserWriter, the banner name will be the name you entered in the Chooser as your user name. However, if your job is being queued to an ImageWriter printer, the job will have "AppleTalk" as its banner name.

Status. This column reports a job's status. There are five possible messages:

Adding	The job is currently being added to the queue.
Ready	The job is ready to be sent to the printer.
Waiting	The job has been flagged to be printed at a future time.
Held	The job has been flagged to wait indefinitely until it is continued or deleted.
Active	The job is being sent to the printer.

Job. This column displays the job's order of entry into the print queue ("job 1" means this was the first job in the current queue; "job 2" the second, and so forth). This column will reflect any modifications made by print queue operators or the supervisor, so "job 1" might not necessarily be first in line to print.

Modifying a NetWare print queue

Most of the operations described in this section (deleting print jobs, postponing print jobs, and continuing jobs that have been postponed) can be performed on more than one print job at a time. However, moving a print job to a different order in the queue can be performed on only one print job at a time.

Note: Users who are not designated as print queue operators by the network administrator cannot modify print queues. If you want to delete or postpone a print job you have submitted, ask your network administrator or a print queue operator to help.

Deleting a job from the queue

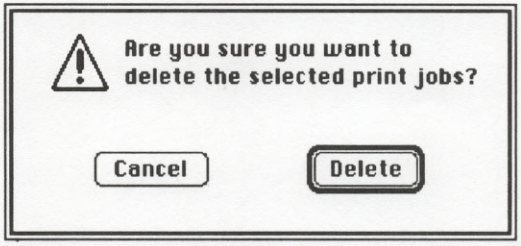
If you are a print queue operator, you can delete any print job from the queue, regardless of its status.

1. **Select the print job(s) you want to delete from the queue.**

   (Shift-click to choose more than one job at a time.)

2. **Click the Delete button.**

   You will see the message:



When you click Delete, the jobs you selected will be deleted immediately, although the list may take a few seconds to update.

Postponing and continuing jobs

A print queue operator can postpone a print job whose status is adding, ready, or waiting. Active jobs cannot be placed on hold. To postpone a job in the queue,

1. **Select the print job(s) you want to postpone.**

   (Shift-click to choose more than one job at a time.)

2. **Click the Hold button.**

   The job(s) you selected will soon be shown as "held."

   You can return a "held" or "waiting" job to "ready" status by selecting it and then clicking the Continue button. (Shift-click to choose more than one job at a time.)

Changing the order of a queue

A print queue operator can change the order of a job that has adding, ready, or waiting status. It is possible to move a job ahead of an active job in the print queue window. However, that job will not be printed until the active job is printed or deleted.

The print queue operator can change the order of only one job at a time. To change the order of the print queue,

1. **Select the print job you want to reorder.**
2. **While holding down the mouse button, drag the job to its new position in the queue.**

   After a few moments, the queue print sequence order will be updated in the "SEQ" column.

Chapter 4. Sending and receiving messages

In this chapter you will learn how to send and receive messages using the NetWare DA Message module.

To receive messages from other users who are logged into the same file server, or from the network administrator on that file server, the Notify INIT must be installed in your System folder. When you start up the Macintosh, you should see the Notify icon on the desktop as the system is starting up.

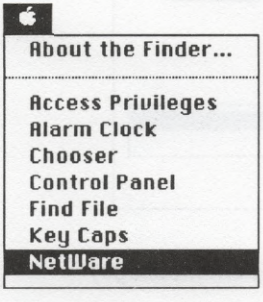
Sending messages

You can use the NetWare DA **message module** to send short messages to other users or groups that are logged into the same NetWare file server where you are logged in.

You must be logged into a file server in order to send messages to anyone using the file server.

To send a message to another user, do the following:

1. **Select NetWare from the Apple (🍎) menu.**



This opens the NetWare DA main window. The left side of the window contains module icons. The About module, which displays a brief description of each NetWare DA module, is automatically selected.

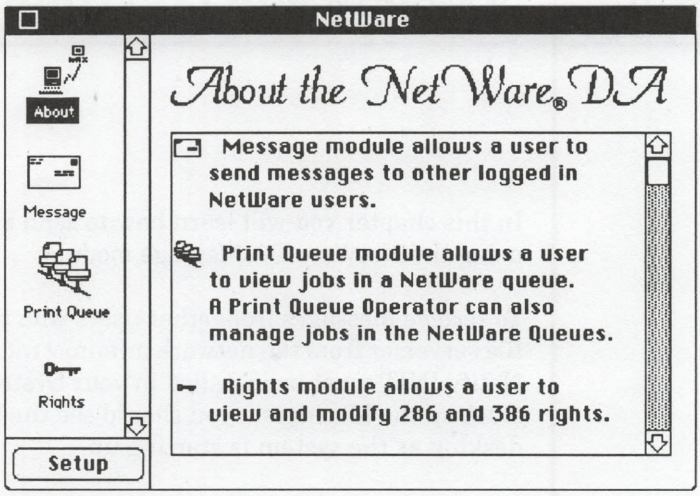

NetWare
About the NetWare DA
About
Message
Print Queue
Rights
Setup
Message module allows a user to send messages to other logged in NetWare users.
Print Queue module allows a user to view jobs in a NetWare queue. A Print Queue Operator can also manage jobs in the NetWare Queues.
Rights module allows a user to view and modify 286 and 386 rights.

FIGURE 4-1 The main NetWare DA window

2. **Click the Message icon.**

This opens the message module window:

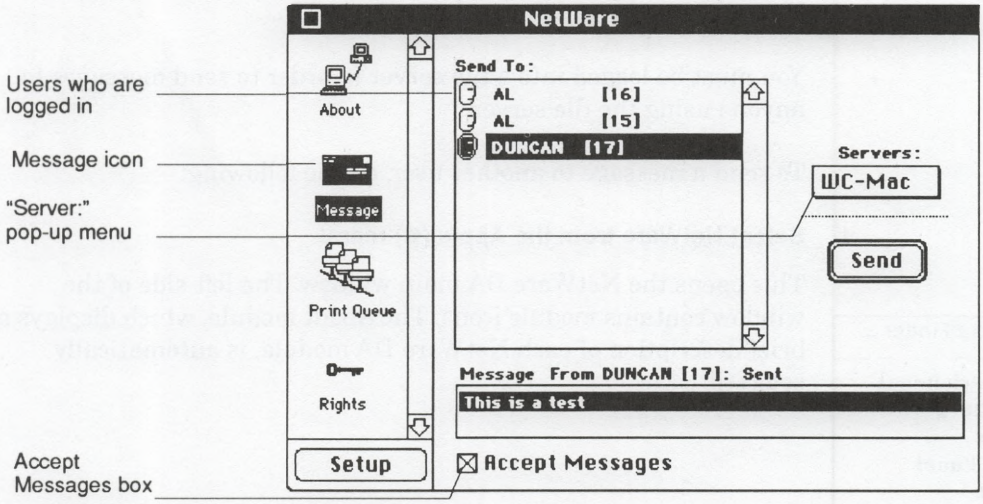


FIGURE 4-2 The Message Module window (with sent message)

3. **Select a server from the Servers pop-up menu.**

   The menu contains a list of all NetWare servers where you are logged in.

4. **Select the user(s) to whom you want to send a message.**

   You can shift-click to select multiple users.

5. **Type your message in the message space.**

   Note that your user name is affixed to the front of the message.

6. **Click the Send button to send your message.**

   Or, you can press <Return> or double-click the selected user(s).

As a test, try sending yourself a message. Make sure the Accept Messages box is checked so that you can receive messages from other users and the network administrator. The figure below shows a sample message.

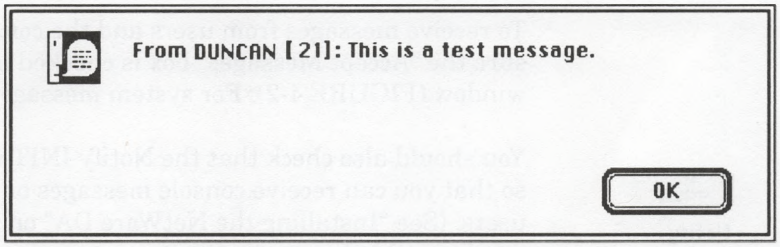


FIGURE 4-3 Sample message

Receiving messages

You can receive messages from three sources: other users, your system administrator (console messages), and from the NetWare server itself (system messages).

Console messages can include anything your network administrator feels is important for users to know about; for example, that a server is being shut down the next day for repairs, or that it will be shut down in an hour.

A common system message is one issued when the file server is being shut down and you are still logged into the server. If you see this message, it is important that you save your work quickly and log out; otherwise you may lose work.

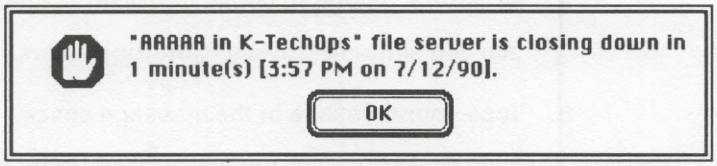


FIGURE 4-4 Server shutdown message

Note: When you see such a message, be sure to save your work on the file server and log out by dragging the volume icon to the Trash icon on your desktop before the file server shuts down.

To receive messages from users and the console, you need to make sure the "Accept Messages" box is checked in the Message Module window (FIGURE 4-2). For system messages this is not necessary.

Notify

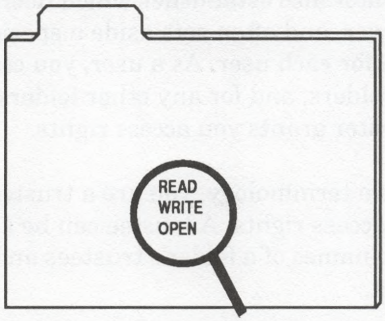
You should also check that the Notify INIT is in your System folder so that you can receive console messages or messages from other users. (See "Installing the NetWare DA" on page 87.) For system messages this is not necessary.

When the Notify INIT is in the System folder, the Notify icon appears briefly at the bottom of the screen when the Macintosh starts up. Holding down the mouse button or the "N" key will prevent the INIT from loading. The Notify icon will then have an "X" over it.

Chapter 5. Setting NetWare security rights

Although looking at a folder's icon is often sufficient to indicate in a general way your rights in a folder, sometimes you might want to know explicitly what they are, or change security rights in a folder. This chapter explains how to use the NetWare DA Rights module to learn about your security rights and to set them in your NetWare folders and files.

Use the Rights Module to learn and set your rights in folders

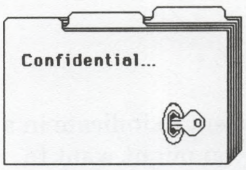


- TRUSTEE RIGHTS
- RIGHTS MASK
- EFFECTIVE RIGHTS

Please refer to Appendix A, "NetWare Security Concepts," for more information about how NetWare security works. If you are working on a mixed network, and will be accessing NetWare servers other than servers running NetWare v2.2, please see Appendix B, "Working on a Mixed NetWork."

Note: The Rights module in the NetWare DA for NetWare v2.2 allows you to view security settings on NetWare v2.15, v2.2, and v3.0 (or later) servers.

NetWare security to protect or share your work



If you are new to a working on a file server, you will quickly appreciate the convenience with which you can share files with any network user. But you will also soon see that you might not want all network users to have unlimited access to your work. NetWare security not only lets the network administrator set up an overall security structure for the network but also allows you define who can use each folder you create.

The network administrator controls network security in two ways, with login security and with folder and file security. The network administrator can specify exactly who can log in to a file server and at what times. By definition, all NetWare users have login privileges on at least one NetWare file server. The network administrator also establishes which users can access which folders on the server, and often sets aside a special folder as a personal work area for each user. As a user, you control security for your personal folders, and for any other folders on the server where the administrator grants you access rights.

In NetWare terminology, you are a trustee of any folder in which you have access rights. A trustee can be a single user or a group of users. The names of a folder's trustees and their rights are kept in a trustee list.

NetWare access rights control whether trustees can open folders, modify them, set security rights, and so forth.

Trustee Rights can also be limited by a folder's rights mask. NetWare v2.2 uses a Maximum Rights Mask.

Your Effective Rights are your actual rights in the folder. They are calculated by combining any Trustee Rights you might have in the folder and rights that are set in the folder's rights mask; if you have been granted a right as a trustee and the right is set in the folder's mask, then the right is an effective right in the folder. For a more detailed explanation of how rights are calculated by NetWare, see "NetWare security concepts" on page 67.

NetWare v2.2 access rights

The main way NetWare security for folders and files is managed is by granting or withholding NetWare access rights. The seven access rights in NetWare for Macintosh v2.2 are listed below.

NetWare right	Definition
Read from files	The right to read from open files.
Write to files	The right to modify an open file.
Create files/folders	The right to create new folders and files.
Erase files/folders	The right to delete folders and files.
Modify files/folders	The right to change folder and file names and modify file and folder attributes.
File Scan files/folders	The right to "see" folders and files.
Access Control	Grants the right to make trustee assignments to other users

NetWare private attribute

When you create a new folder on a NetWare v2.15 or v2.2 file server using a Macintosh computer, the folder is automatically assigned the Private attribute. A private folder icon appears gray to users who do not have the File Scan right in the folder.

Later in this chapter you will learn how to use the NetWare desk accessory to set or remove the Private attribute. Removing the Private attribute makes a folder "public."

Your private folders cannot be opened by other users unless you have given them the File Scan right. The File Scan right lets trustees open a private folder and see the files and folders it contains.

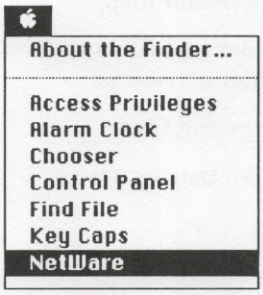
If a directory is created using a DOS computer, the Private attribute is not set by default, and the folder icon appears as a plain folder on your desktop.

Accessing the Rights module

This section describes how to access the NetWare DA Rights module and learn what your Effective Rights are in a folder. You can also use the Rights module to set security in your folders. You will learn about this in later sections of this chapter.

To open the Rights module:

1. **Choose NetWare from the Apple (🍎) menu.**



This opens the NetWare DA main window. The left side of the window contains module icons. The About module, which displays short descriptions of each NetWare DA module, is automatically selected.

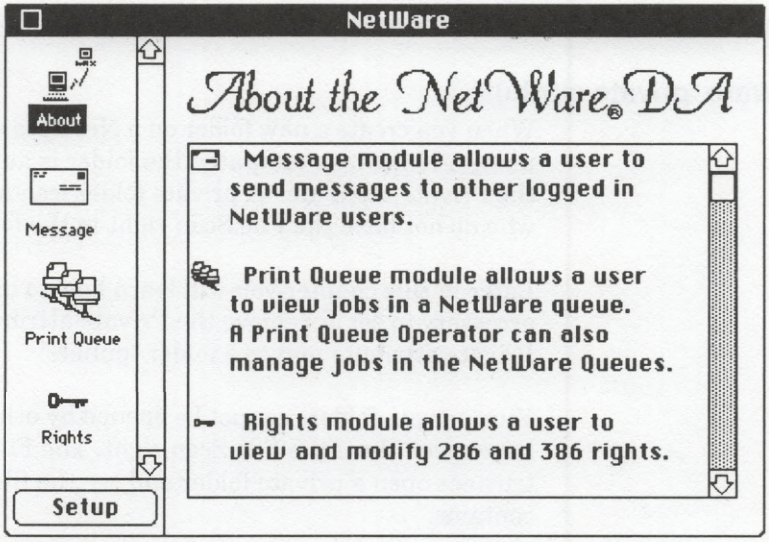

NetWare
About
Message
Print Queue
Rights
Setup
About the NetWare® DA
Message module allows a user to send messages to other logged in NetWare users.
Print Queue module allows a user to view jobs in a NetWare queue. A Print Queue Operator can also manage jobs in the NetWare Queues.
Rights module allows a user to view and modify 286 and 386 rights.

FIGURE 5-1 The About module

2. **Click the Rights icon.**

A dialog box will appear that lists the folders on one of the server's volumes (FIGURE 5-2).

The name of the current volume is shown in two pop-up menus—one at the top of the list of folders and the other in the upper-right corner of the dialog box.

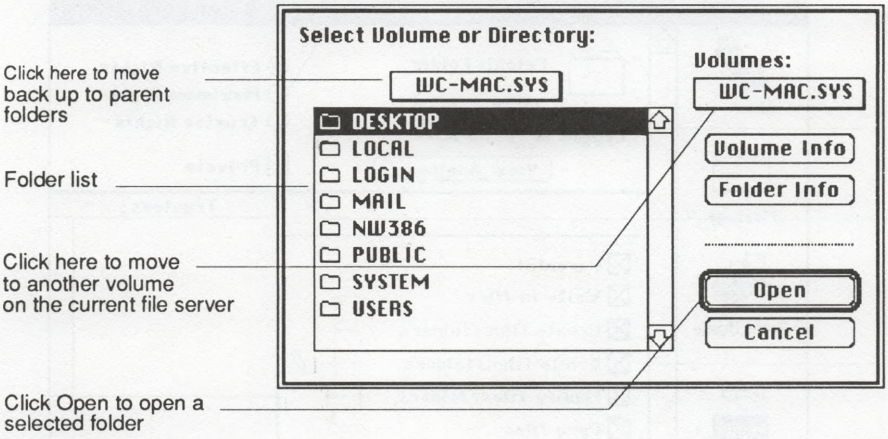


FIGURE 5-2 Rights Module folder list

3. **Select a folder from the folder list.**

4. **Click the Folder Info button.**

   Or for volume information, click the Volume Info button. The Rights module's main window will appear (FIGURE 5-3), and your Effective Rights in the current folder (or volume) are automatically displayed in the middle of the window.

   Your Effective Rights are gray because they are calculated by NetWare and you cannot directly set them. To have your Effective Rights increased, someone must assign you additional Trustee

Rights, or modify the rights mask. (Remember that your effective Rights are the rights you actually have in a folder.)

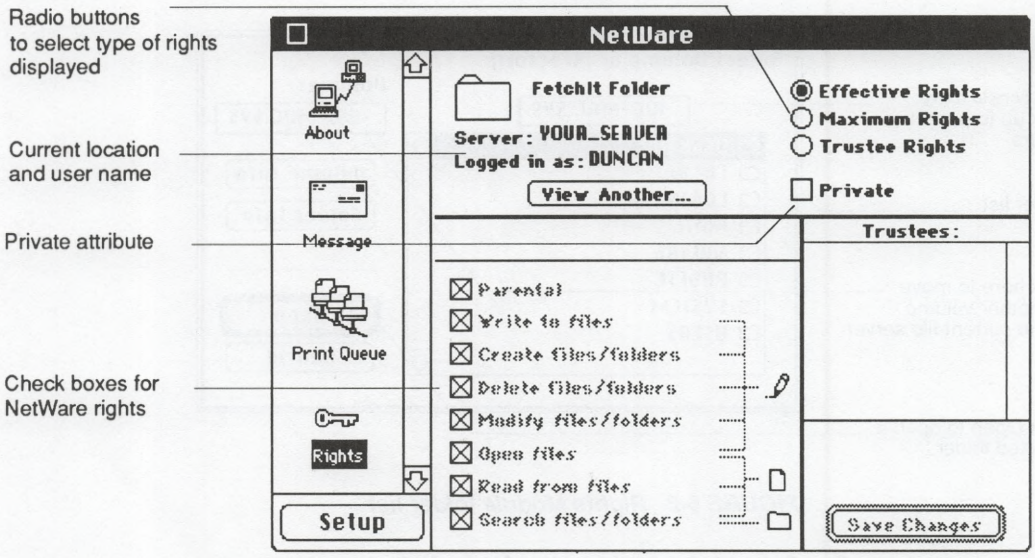


FIGURE 5-3 The Rights module main window

Note: If the Rights module window displayed on your workstation monitor looks different than the one shown in FIGURE 5-3 , you are accessing a different kind of NetWare server. Appendix B, "Chapter" on page 77 describes the rights schemes of other kinds NetWare servers.

The Rights module main window contains the following elements:

- The name of the volume, folder, or file you selected.
- Your user name and the server name.
- Radio buttons used to view a folder's Effective Rights, Maximum Rights Mask and Trustee Rights.
- The "View Another" button which you can click to return to the folder list dialog box.

- The Private attribute check box. If this is checked, the volume, folder, or file is private and only trustees with the search right in the folder will be able to open it.
- The NetWare rights are displayed in the middle of the window. A check beside a right shows that it is active.

The rest of this chapter describes how to use the NetWare DA rights module to set security on your folders and files.

To close the NetWare DA, choose Close from the File menu or click the Close box.

Sharing your folders with other users

As you store information on the file server, you might find you want to share your folders and files with others. NetWare lets you control who can open your folders and what actions they can perform on your data.

The sections that follow describe some of the many ways you can use the NetWare DA to create special kinds of folders for other users to access.

Making a folder public to all users

You must have the Access Control right in a volume or folder in order to change the Private attribute. (Such a folder will have a black tab.)

Folders in NetWare can be public or private. A folder is automatically given the Private attribute when it is created on a NetWare server. Folders with the Private attribute are gray to other users (except those who can log in as supervisor or have supervisor equivalence) until you either assign Trustee Rights to those users or remove the Private attribute. Folders that you create appear to you as plain with black tabs. (The only other time that another user can see inside a folder you create is when the user has Trustee Rights in a folder above the folder where you created the file. In that case, the folder you create will not be private to the user because the user inherits Trustee Rights from the folder above in "your" folder.)

A public folder is available for all users to open; although without any trustee assignments in the folder, the only thing the users will be able to do with the folder is open it. A private folder is closed to all users except those who have the Access Control right in that folder.

To make a folder public, choose NetWare from the (Apple) menu and click the Rights icon to display the main Rights window:

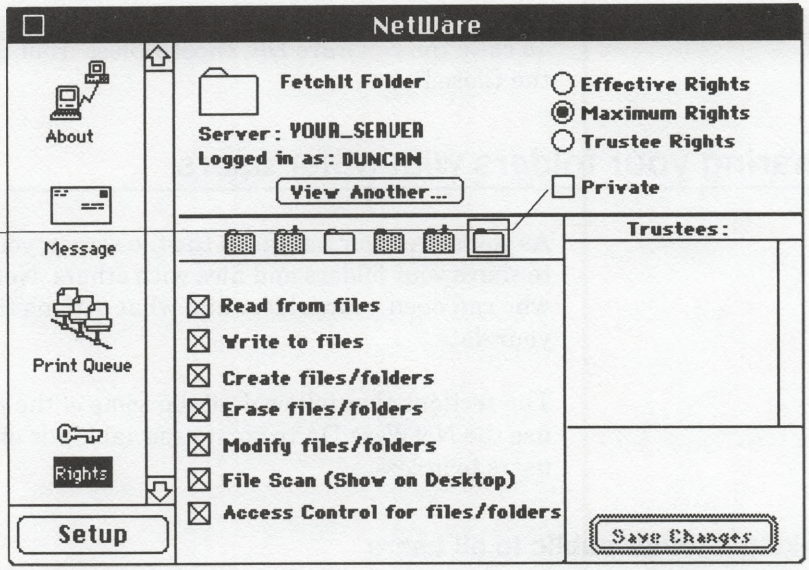


FIGURE 5-4 Making a folder public

1. **Select the folder you want to make public.**

   (Use the Rights Module folder list, FIGURE 5-2 on page 39.)

2. **Click the Private check box.**

   The private attribute is now turned off, and the selected folder is public.

Adding trustees: allowing others access to your folder

Before you can assign specific rights to another user in a folder, you must make sure that user is a trustee of that folder. To add trustees, you need the Access Control right in the folder.

To add a trustee to a folder, choose NetWare from the Apple (🍎) menu and click the Rights icon. Select a folder from the folder list (FIGURE 5-2 on page 39), then follow these steps:

1. **Click the Trustee Rights button.**

   This button will not be available for you to select unless you have the Access Control right in the folder. When you click this button, the names of any existing trustees appear in the lower right panel of the window. These are the users and groups who already have trustee assignments in this volume or folder.

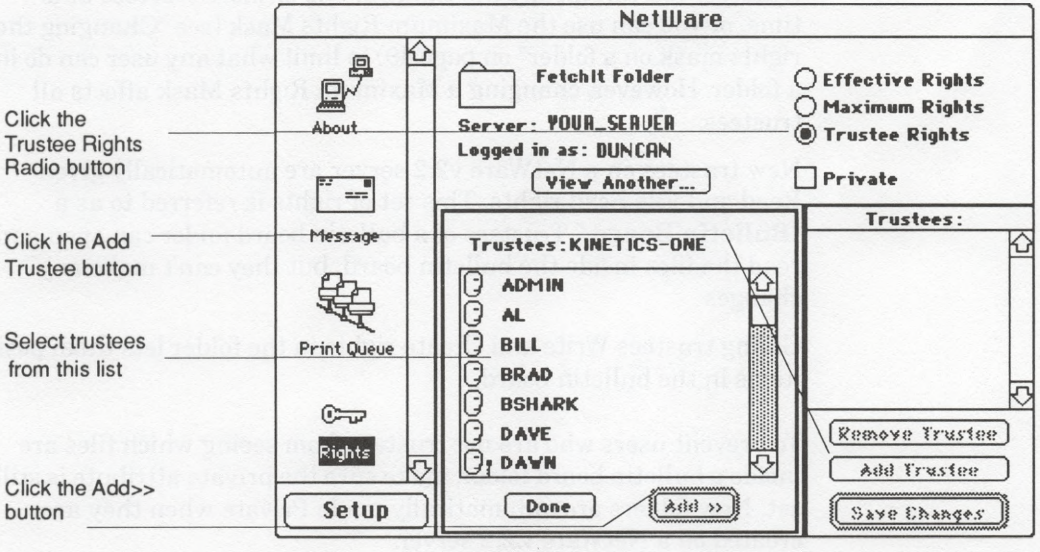


FIGURE 5-5 Adding trustees to a folder.

2. **Click the "Add Trustees" button.**

   The center panel displays a list of users and groups on the file server. These are the users and groups who are not trustees.

3. **Choose the name of the user or group you want to assign to this volume or folder.**

   Hold down the shift key to select more than one user or group.

4. **Click the "Add >>" button.**

   This adds the users or groups you selected as trustees of the folder, which allows them the right to see or use your folder. See the next section for details on fine-tuning their rights.

5. **When you finish adding trustees, click the Done button.**

Giving other users a specific set of rights on your folders

After you've added trustees to a folder, you might want to make **trustee assignments** by assigning a specific set of rights to the trustees. You can modify the rights of one or more trustees at a time, or you can use the Maximum Rights Mask (see "Changing the rights mask on a folder" on page 49) to limit what any user can do in a folder. However, changing a Maximum Rights Mask affects all trustees.

New trustees on a NetWare v2.2 server are automatically given Read and File Scan rights. This set of rights is referred to as a "**Bulletin Board**." Trustees of a bulletin board folder can open and read the files inside the bulletin board, but they can't make any changes

Giving trustees Write and Create rights in the folder lets them post items in the bulletin board.

To prevent users who are not trustees from seeing which files are inside a bulletin board folder, make sure the private attribute is still set. New folders are automatically made Private when they are created on a NetWare v.2.2 server.

Choose NetWare from the Apple (🍎) menu and click the Rights icon. Select a folder from the folder list (FIGURE 5-2 on page 39). Then follow these steps to give trustees rights in a folder:

1. **Click the Trustee Rights button in the main Rights Module window.**

   The names of a folder's trustees will appear in the trustee list on the right side of the main Rights module window.

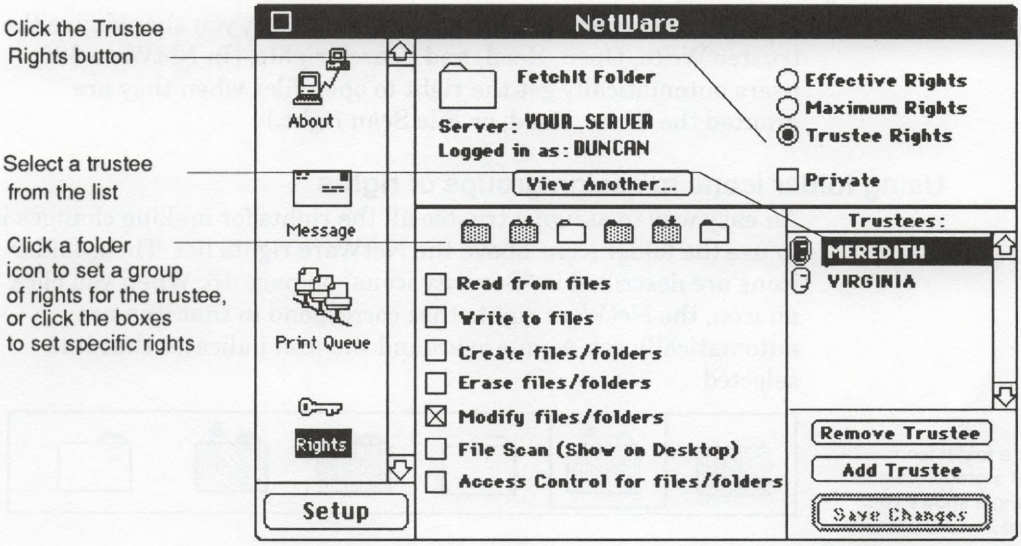


FIGURE 5-6 Setting Trustee Rights

2. **Select the name of a trustee.**

   The trustee's current rights will be shown in the check boxes. Trustee Rights are inherited from parent folders unless they are blocked by a rights mask or revoked, so if the trustee has any other Trustee Rights in a parent folder, they will be shown. If you would like more information about how Trustee Rights are calculated, see "How NetWare calculates Trustee Rights" on page 71.

   You can hold down the shift key to select more than one trustee at a time. When you select multiple trustees, the rights for all the trustees are set at once.

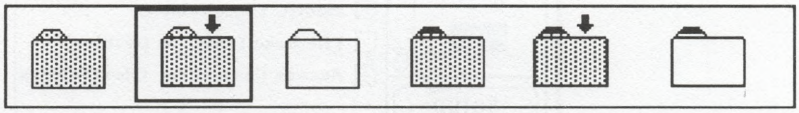
3. **Select the rights you want to give to the trustee.**

   To modify the trustee's rights, you can click the check box next to each right you want to change. The rights you click are checked (added) or unchecked (removed).

   To allow a trustee to make changes in a folder, you should give the trustee Write, Open, Read, and Search rights. (In NetWare 386, users automatically get the right to open files when they are granted the Write, Read, or File Scan right.)

Using folder icons to assign groups of rights

An easy way to assign a trustee all the rights for making changes is to use the folder icons above the NetWare rights list. These folder icons are described in "Security icons" on page 16. When you click an icon, the NetWare rights that correspond to that icon are automatically set. A square around the icon indicates that it is selected.



Click a folder icon to set a group of rights; rectangle shows your choice

Creating a drop box folder

Trustees of a drop box can put files into the drop box folder but they can't open the folder and see what's inside. You can create a drop box by giving trustees the rights to make changes. By setting the Private attribute and withholding the File Scan right, you prevent trustees from seeing inside the drop box.

To create a drop box folder, choose NetWare from the Apple (🍎) menu and click the Rights icon. Select a folder from the folder list (FIGURE 5-2 on page 39). Then follow these steps:

1. **Click the Trustee Rights radio button.**

   The names of the folder's trustees will appear in the lower right panel.

2. **Select one or more trustees.**

   You can shift-click to select more than one trustee at a time. When you select more than one trustee, the rights for all the trustees are set at once.

3. **Click the drop box folder icon, and then click Save Changes.**

   You can assign a trustee all the rights for a drop box by using the drop box folder icon above the rights list. Click the gray folder with the arrow and the plain tab. This gives the folder's trustee Write, Create, and Modify rights, and sets the private attribute.

   To use the folder as a drop box, a trustee needs Create, Write, and Modify rights. To modify the trustee's rights, you can click the check box next to each right you want to change. The rights you click are checked (added) or unchecked (removed).

   When users copy a folder or file into a drop box folder, they will see the following message:

FIGURE 5-7 Drop box message

This message reminds you that once you copy a folder or file into the drop box, you will not be able to see it or remove it. You cannot copy a file or folder into a drop box if there is already a file or folder by that name in the drop box.

Giving other users the right to change security in a folder

You can give other users the right to assign trustees and modify security on one or more of your folders. To do this, you need to assign the other users as trustees and give them the Access Control right on that folder. Note that giving a trustee the Access Control right does not automatically give the user all rights in a folder, but it does give the user the ability to set rights in the folder.

To give a trustee the right to change security on a folder, choose NetWare from the Apple (🍎) menu and click the Rights icon. Select a folder from the folder list (FIGURE 5-2 on page 39). Then follow these steps:

1. **Click the Trustee Rights radio button.**

   The names of the folder's trustees will appear in the lower right panel.

2. **Select one or more trustees.**

   You can shift-click to select more than one trustee at a time. When you select more than one trustee, the rights for all the trustees are set at once.

3. **Click the plain black tab folder icon, and then click Save Changes.**

   Alternatively, you can select the Access Control right in the list of NetWare rights, then click Save Changes.

Removing trustees: Taking users off the access list to your folder

Removing a trustee means that person will not be able to access your folder.

You need the Access Control right in the folder to be able to remove users and groups from the list of trustees.

To remove someone from your folder's trustee list, choose NetWare from the Apple (🍎) menu and click the Rights icon. Select a folder from the folder list (FIGURE 5-2 on page 39). Then follow these steps:

1. **Click the Trustee Rights radio button.**

   The names of the folder's trustees will appear in the lower right panel.

2. **Select one or more trustees.**

   You can shift-click to select more than one trustee at a time. When you select more than one trustee, the rights for all the trustees are set at once.

3. **Click the Remove Trustees button.**

The trustee is removed from the list.

Note: Because a folder's Trustee Rights can be inherited in nested folders, removing a trustee from a folder can also remove that trustee from folders nested beneath it. Before you remove a trustee from a folder, make sure the trustee is not depending on those Trustee Rights to work in nested folders. Similarly, removing a user from a trustee list in a folder does not guarantee that the user has no rights in the folder, because the user may be a trustee of a parent folder.

Changing the rights mask on a folder

The folder's rights mask limits the rights that can exist in the folder. If a right is not set in the rights mask, it cannot exist in the folder, no matter what Trustee Rights are set.

NetWare v2.2 uses a Maximum Rights Mask. Before you try to set your folder's rights mask, you should read "Maximum Rights Mask and Effective Rights" on page 72 so that you have a thorough understanding of how the rights masks work.

When a folder is first created, its rights mask allows all NetWare rights. However, your network administrator, or another user who can control the folder, may decide to limit rights by setting the folder's rights mask.

Generally your network administrator will set rights masks and you will not need to attempt this. You need the Access Control right to modify a rights mask.

To set a rights mask, choose NetWare from the Apple (🍎) menu and click the Rights icon. Select a folder from the folder list, (FIGURE 5-2 on page 39). Then follow these steps:

1. **Click the Maximum Rights radio button.**

   The NetWare rights are checked to show the rights mask.

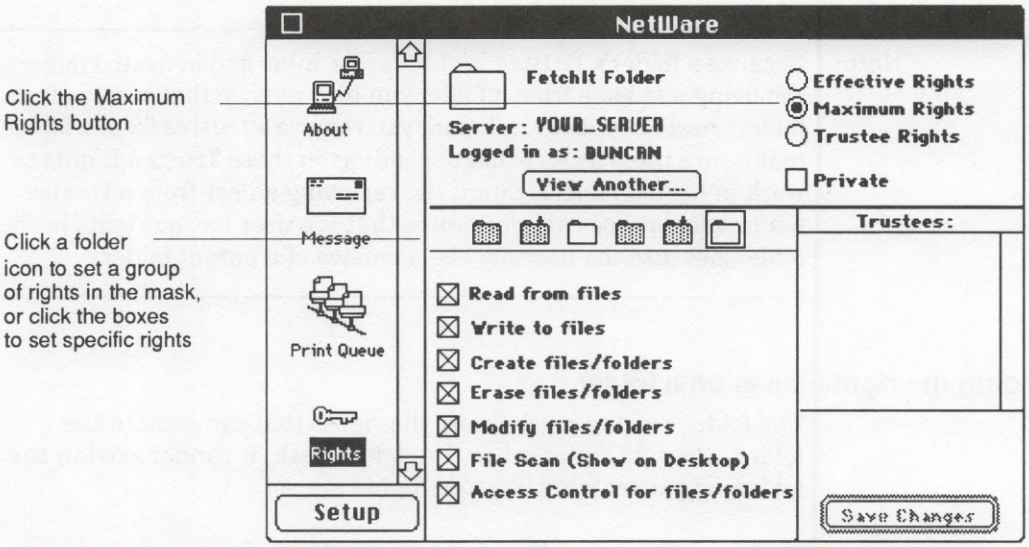


FIGURE 5-8 Viewing and setting a rights mask

2. **Click a folder icon (or the rights boxes) to set the rights mask.**

   See "Using folder icons to assign groups of rights" on page 46 for details on using the folder icons. Please see Appendix A for more information on rights masks.

3. **Click Save Changes when you are finished.**

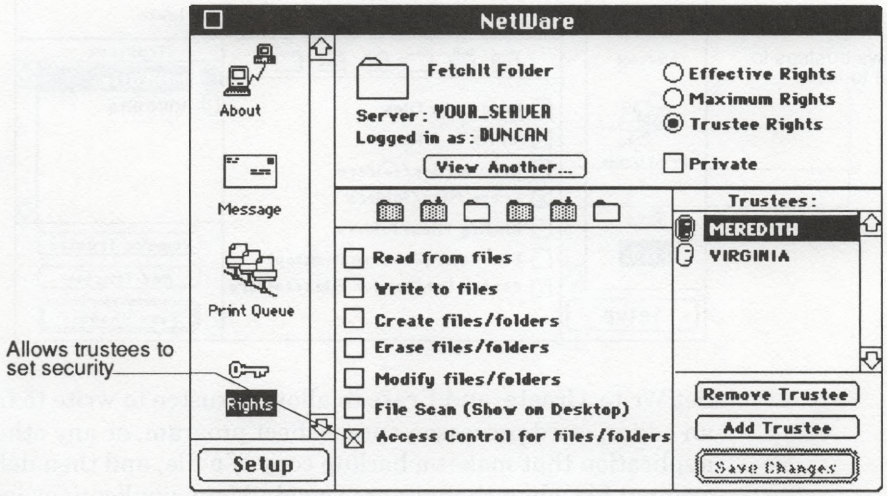
Example assignments of Trustee Rights

This sections shows how you would set the NetWare DA to allow other users to perform some common tasks with your folders.

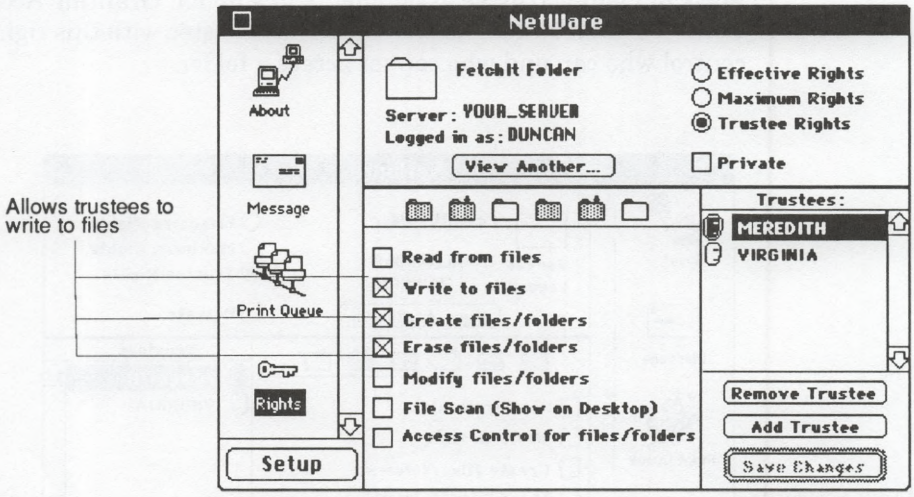
Each of the following six examples assumes that the Maximum Rights Mask is open so that full rights are allowed through it.

Example 1. Allowing others to set security

Set Access Control to let a trustee to change the Maximum Rights Mask or change trustee assignments in a folder. Granting Access Control should be done cautiously since a trustee with this right can control who can and who cannot access a folder.



Example 2. Allowing others to write to files

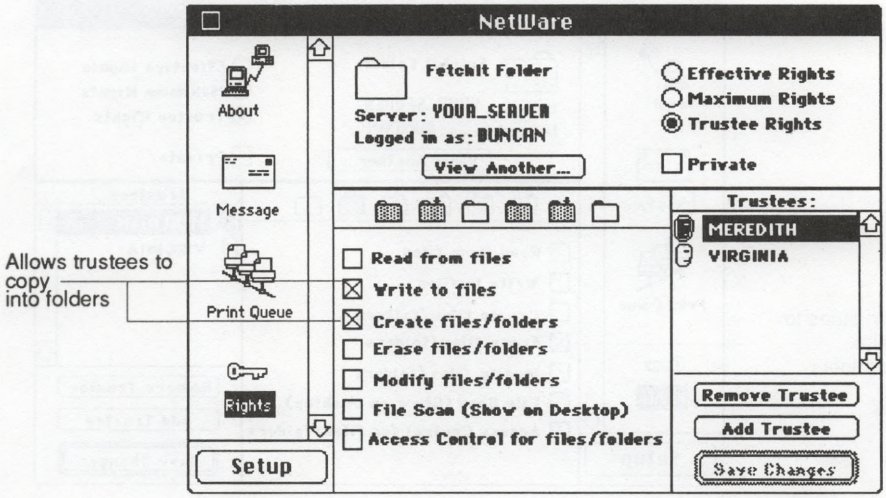


Set Write, Create, and Erase to allow a trustee to write to files with an editor, word processor, spreadsheet program, or any other application that makes a backup copy of a file, and then deletes the original file when changes are saved. Many applications work this way and therefore implicitly require Create and Erase.

If you try to save a file on a NetWare server and receive a message that the application can't create a copy to save the file, then you probably need to have your rights in a folder increased to include Create and Erase.

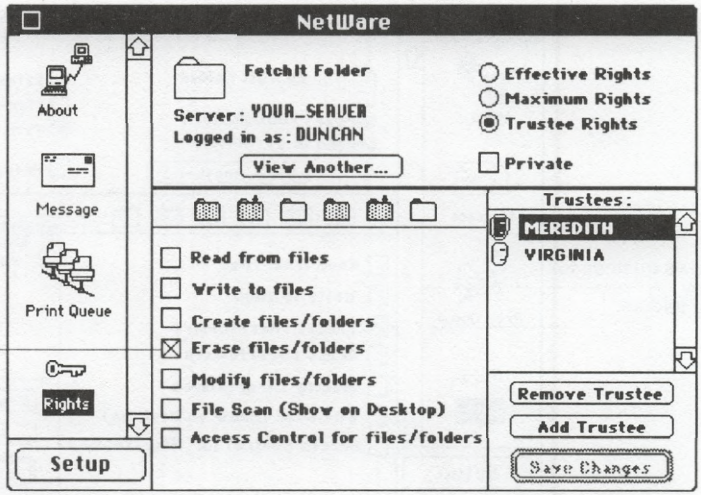
Example 3. Allowing others to copy into folders

If you want trustees to be able to copy files and folders into a folder, grant Write and Create. Write and Create will also let users create files and write to them.



Example 4. Allowing others to delete files, remove folders

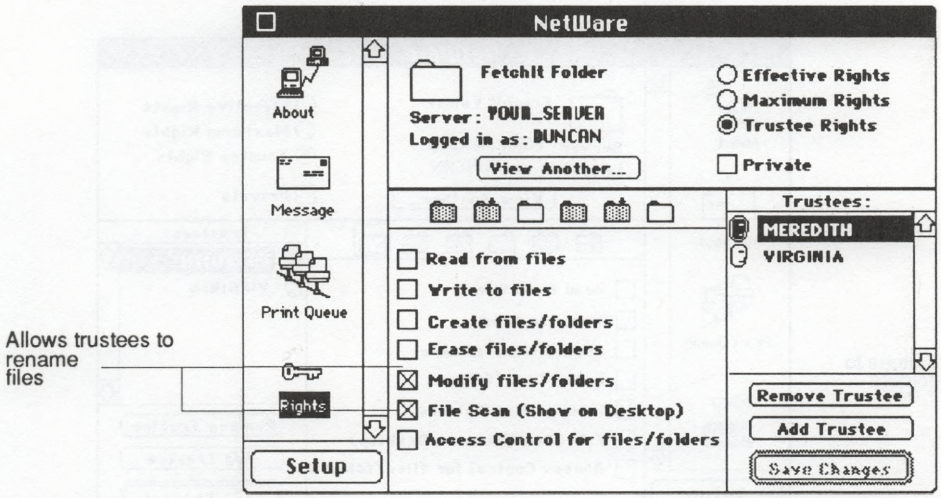
To allow a trustee to delete a file or remove a folder, grant Erase. Macintosh users who have the Erase right will be able to delete files and remove folders by dragging them into the Trash.



Allows trustees to delete files, remove folders

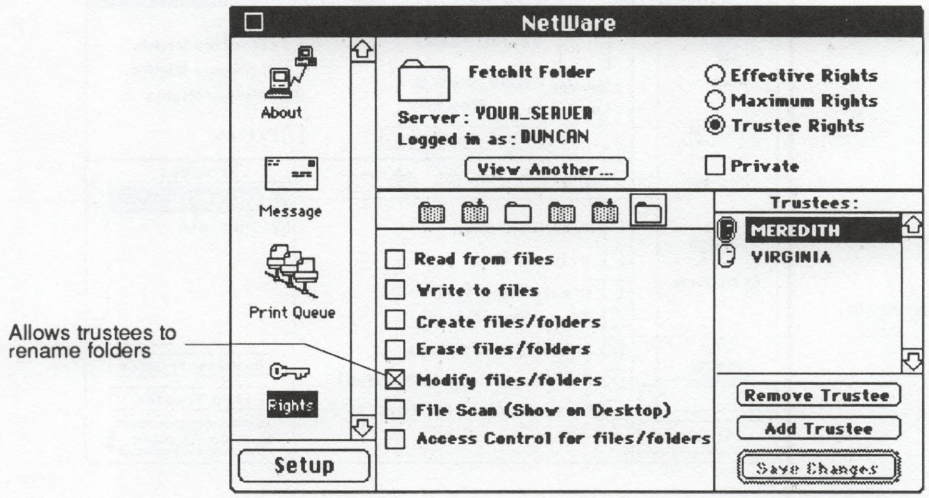
Example 5. Allowing others to rename files

To allow a trustee to rename files in one of your folders, grant Modify. Macintosh users will rename files by backspacing over the old filename and entering a new one.



Example 6. Allowing others to rename folders

To allow a trustee to rename folders, grant Modify. Macintosh users will be able to rename folders by backspacing over the folder name and entering a new one.



Chapter 6. Help with problems

This chapter discusses some problems you could encounter while working with NetWare for Macintosh and offers some solutions to those problems.

Login problems

Many of the problems that occur at login are related to your start-up disk. If the *AppleShare Workstation* software is incorrectly installed, or you have the wrong version of the System file, then you will not be able to log in to the server.

The AppleShare icon isn't shown in the Chooser

One of the following is probably the cause:

- The *AppleShare Workstation* software is not installed on your start-up disk. See the network administrator for installation help.
- Your Macintosh has switched to a start-up disk that does not have AppleShare installed on it. (See "Finding the correct start-up Disk" below.)

Finding the correct start-up disk

If you are using two start-up disks, one with current software and one with earlier software, your Macintosh could switch to the wrong start-up disk and you will not be able to see the AppleShare icon in the Chooser. This is particularly likely to happen if you are *not* in Multifinder.

The current start-up disk icon is shown in the upper right-hand corner of your screen (unless you move it).

If your start-up disk is inadvertently switched, do one of the following to change back to the original disk:

- Press the Option key while you open an application on another start-up disk.
- Press the Option and Command keys at the same time while you double-click the Finder icon on another start-up disk.
- Choose Restart from the Special menu.

The file server isn't listed in the Chooser

If you select the AppleShare icon in the Chooser and your file server is not listed, one of the following could be the cause:

- The file server is out of service or has been renamed. Check with your network administrator.
- There is a problem on the network between your workstation and the file server you want to use. Check your cabling and make sure the network cable is connected to its port at the back of your Macintosh. If everything is correct at the workstation, check with your network administrator.

You can't log in with your registered user name or password

If you select a file server in the Chooser, but you can't log in with your registered user name or password, one of the following could be the cause:

- You are typing your name or password incorrectly. You should check with your network administrator to see how your registered user name and password should be typed. If you created your own password and have forgotten it, the network administrator cannot retrieve it. However, the network administrator can help you create a new password.
- The network administrator has not given you proper access to the file server. Check with your network administrator.

- The file server is out of service. If the file server is connected to an internetwork, the Chooser could behave as if the file server is still running, and will interpret the login failure as an incorrect password entry.

Your start-up disk failed to access the file server automatically

If you have set the automatic access option on your workstation start-up disk ("Logging into a NetWare file server" on page 1), but the disk failed to access the file server at start-up time, one of the following problems could be the cause:

- The file server has been taken out of service. Check with your network administrator.
- There is a problem on the network between your workstation and the file server. Check with your network administrator.
- The *AppleShare Prep* file has been moved or deleted from your System Folder. Use the Chooser to log in again, and save your name and password. A new *AppleShare Prep* file will be created.

File server problems

Most problems you can experience while working on the file server are due to insufficient access privileges. Unless you have the rights to change security on a volume, folder (or file stored on a server running under NetWare v3.0 or later), you should contact the network administrator if you need additional access privileges.

You can't open a volume that appears on the desktop

If you can't open a volume icon that appears on your desktop, you might not have access rights to that volume. When you try to open the volume, a message will appear, indicating that you don't have

access rights. To find out your rights in the volume, use the NetWare DA (see Chapter 5). To increase your access rights, check with the network administrator.

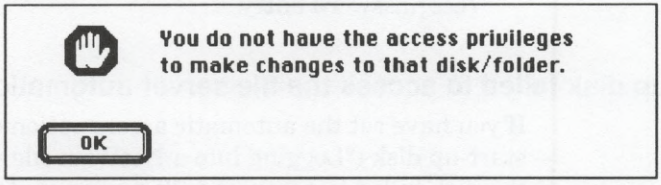


FIGURE 6-1 Warning of insufficient access privileges

You can't delete a folder

If you can't successfully drag a folder to the Trash to delete it, one of the following could be the cause:

- You do not have sufficient access rights in the folder. To delete a folder, you must have the Erase right in the folder and any folders it contains.

For example, the folder you are trying to delete might contain a folder owned by another user for which you don't have the Erase right. If so, drag the folder out of your folder.

- Someone is working with the folder you're trying to delete. If you've determined that you have the rights required to delete the folder and still can't delete it, someone could be using it. Try again later when you think no one else is working in the folder.

You can't open an application stored on the file server

If you can't open an application that is stored on the file server, one of the following could be the cause:

- System files are stored in the folder along with the application. Remove the System file and Finder from the folder.
- The application requires other resources to be in the same folder. Check the application's documentation.

- The application requires that you have Write, Modify, and Create rights in the folder in which it is stored. If the application is stored in your work area, use the NetWare DA to change the rights for the application's folder and try to open the application again.

Note: If you do not have sufficient permission to change the application folder's rights, try quitting the application and accessing it from another folder. You can do so by having ready an existing document that was created with that application. Place the document in a folder where you have all rights and see if the application will open it. If the application opens the document, you can exit that document and create another from within the current folder. If you can't solve the problem, ask the network administrator to assign you the rights you need to access the application.

- If the application is stored in a shared folder, it might be in use. Some Macintosh applications can be opened only by one user at a time.
- The application might not run on the file server, and must first be copied to a local drive. Copy the application to a local drive and try opening it again.

The folder you want doesn't appear nested in a folder

If you are looking for a folder within a folder but can't find it, one of the following could be the cause:

- The folder is nested in another folder, or located on a different volume. Use the Find File DA to locate the folder.
- The folder is nested in a private folder for which you do not have the File Scan right. Use the Find File DA to locate a folder. Even if you do not have permission to open the folder, Find File will find it. See your network administrator to perhaps change the folder's access rights.

- The folder is flagged Invisible. It still can be located with the Find File DA. Check with your network administrator to have the Invisible flag removed.

You can't copy a folder stored on the file server

If you can't copy a folder stored on the file server, one of the following could be the cause:

- You don't have sufficient access rights to the folder you are trying to copy. To copy a folder, you must have Read and File Scan rights in the folder. Use the NetWare DA to check your rights for the folder.
- You don't have sufficient access rights to the folder which you are trying to copy. You must have Create and Write rights for the folder.

You can't close, save, or continue your document

If you're working with an application that is stored on the file server and you can't continue, close, or save your document, one of the following could be the cause:

- File service has been unexpectedly discontinued, or there is a problem in the network cabling somewhere between your Macintosh and the file server you're using. The application you're using is unable to get the information it needs to continue. In this case, you usually receive an error message. Try to save the document to your local disk.
- You don't have sufficient access rights to make changes in the folder where you're trying to save the document. To save a document in a folder, your rights in the folder must include Write (and in many cases Create and Erase also, see "Example 2. Allowing others to write to files" on page 52 for more information). Use the NetWare DA to check your rights. Try saving the new document on your local disk instead of the server.

NetWare DA problems

Most problems with the NetWare DA are due to improper installation. Appendix C of this guide tells how to install the NetWare DA.

You can't open the NetWare DA

There might not be enough memory available. If you have a RAM cache or RAM disks active, turn them off. Or, try removing system INITS from the system folder. If you are running Multifinder, and are concurrently running some other application, try exiting that application.

A dialog box appears when you open the DA

If you open the NetWare DA, and see the dialog box illustrated by FIGURE 6-2 , then the Desk Accessory was unable to find its modules.

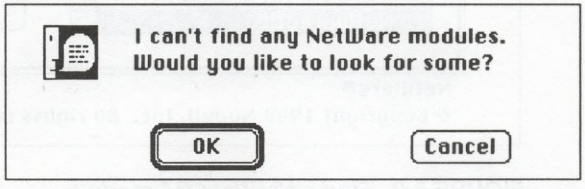


FIGURE 6-2 Can't find NetWare modules

On some networks, the network administrator will designate a folder on a file server where the modules are stored. If the DA cannot find the modules, it is either because they have been moved, or, if you are using copies on a server, that the server is shut down. See the network administrator to find the location of the modules.

Follow these steps to install the modules:

1. **When the dialog box is displayed, click OK.**

A second dialog box with a folder list will appear (FIGURE 6-3).

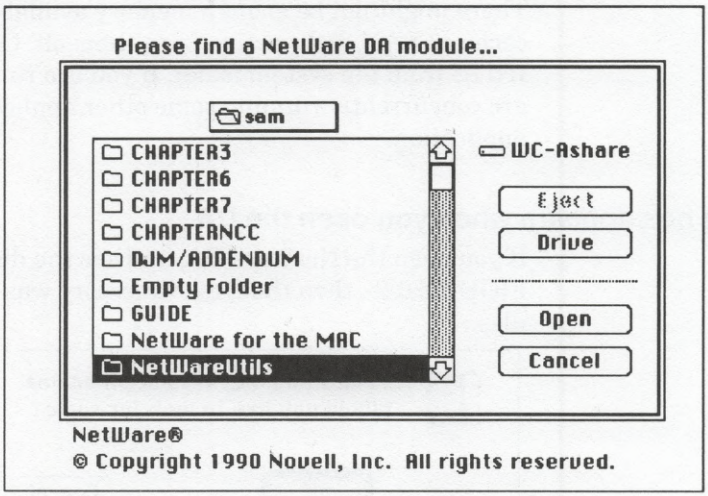


FIGURE 6-3 Find a NetWare DA module

2. **Select the folder where the modules are stored.**

   Scroll through the list until you find the name of the folder where the modules are stored. Then click OK. You can click the Drive button to search for the modules on another drive (or server).

3. **Open the folder.**

   Open the folder that holds the NetWare utilities (either by clicking Open or double-clicking the folder name). One of the modules will be automatically selected.

4. **Click the Open button.**

   All of the NetWare modules in the folder will be installed and the DA will remember the location of the modules.

You can verify that the modules are installed by looking for their icons in the NetWare DA window (FIGURE 6-4).

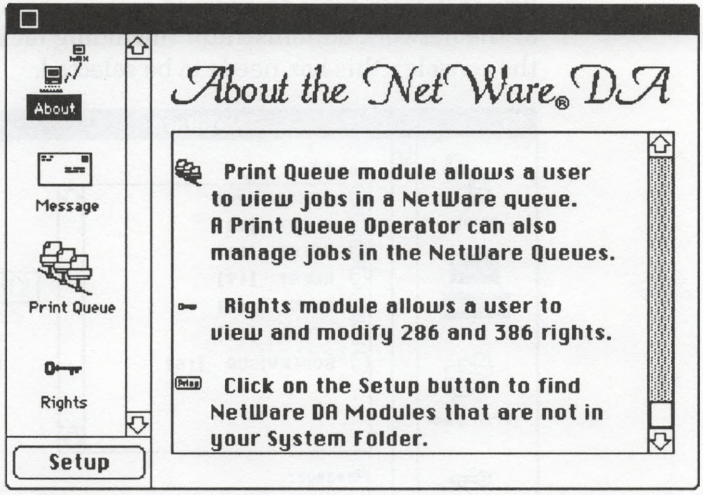

About the NetWare® DA
About
Message
Print Queue
Rights
Setup
Print Queue module allows a user to view jobs in a NetWare queue. A Print Queue Operator can also manage jobs in the NetWare Queues.
Rights module allows a user to view and modify 286 and 386 rights.
Click on the Setup button to find NetWare DA Modules that are not in your System Folder.

FIGURE 6-4 The NetWare DA window

Not all of the Module icons are displayed in the NetWare DA window

When the NetWare DA is installed it looks for the NetWare modules in the location that was given at installation. If it cannot find the modules, it will next look in your System Folder. If some of the modules have been moved from the System Folder or from the location where they were originally installed, then you can use the Setup button to specify the new location of the modules. When you click the Setup button, you will be prompted to enter the new path for the modules.

You are not receiving messages with the Message module

Make sure the Accept Messages box is checked in the Message window (FIGURE 6-5). In order to receive messages from other users or the network administrator (including messages broadcast from the console), this box needs to be selected.

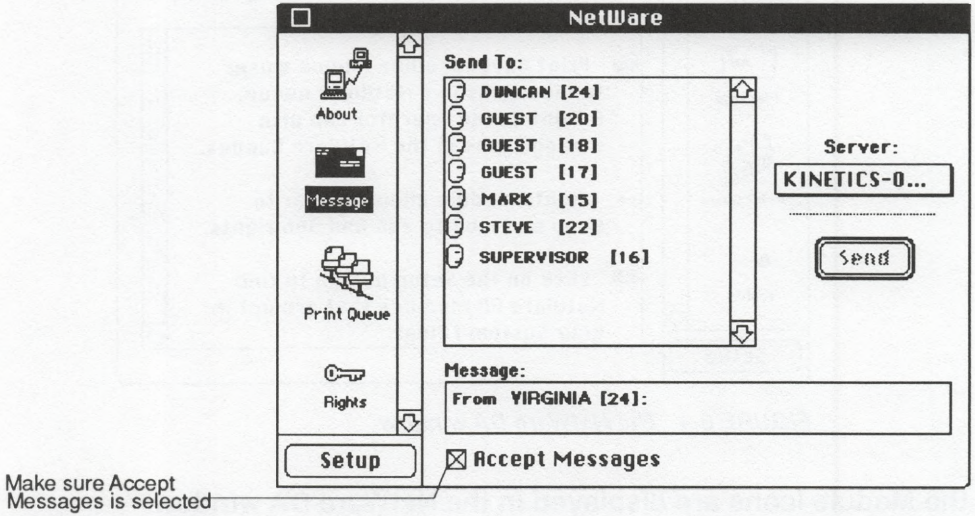


FIGURE 6-5 The Message Module window

In order to receive any messages from other users and the network administrator, the Notify INIT must be in your system folder. If it is not, obtain a copy from the network administrator, and drag it into your System folder. Restart your Macintosh. You will see the Notify icon displayed briefly at the bottom your monitor screen when your Macintosh boots up.

Appendix A NetWare security concepts

This appendix provides a conceptual overview of NetWare v2.2 security, including an explanation of how security rights are calculated. NetWare automatically calculates your rights in a folder, so this information is provided as background for those users who want a deeper understanding of NetWare security.

You learned about NetWare access rights in "Setting NetWare security rights" on page 35. These rights range from allowing you to open folders to letting you assign other users access rights in a folder. NetWare access rights can be assigned to a folder as Trustee Rights, or revoked in a rights mask.

In order to exercise a right in a folder it must be an effective right. Effective Rights are the combination of Trustee Rights *and* the folder's rights mask. In this appendix, each element of the Effective Rights equation, Trustee Rights and rights masks, will be discussed in detail.

Note: If, in addition to being able to access a NetWare v2.2 server, you can also access from your workstation a NetWare v2.15 server or a server running NetWare v3.0 or later, you will want to read Appendix B to learn about security on those servers.

NetWare Trustee Rights

Any user with rights in a folder is called a trustee of that folder. Each folder has a trustee list containing all the users and groups of users assigned rights in the folder. When users or groups are assigned Trustee Rights to a folder, this is called a **trustee assignment**.

- The network administrator, or anyone else who is supervisor equivalent, implicitly has Trustee Rights in all folders (although their names may not be shown in the folder's trustee list).
- Anyone with the Access Control right in a folder can make another user a trustee of that folder.

Trustee assignments made to one folder extend to all the folders nested within it—unless they are redefined by a new trustee assignment or blocked by a folder's rights mask. FIGURE 1-1 shows

how Trustee Rights extend to nested folders. Later in this appendix you will see how a folder's rights mask can block Trustee Rights.

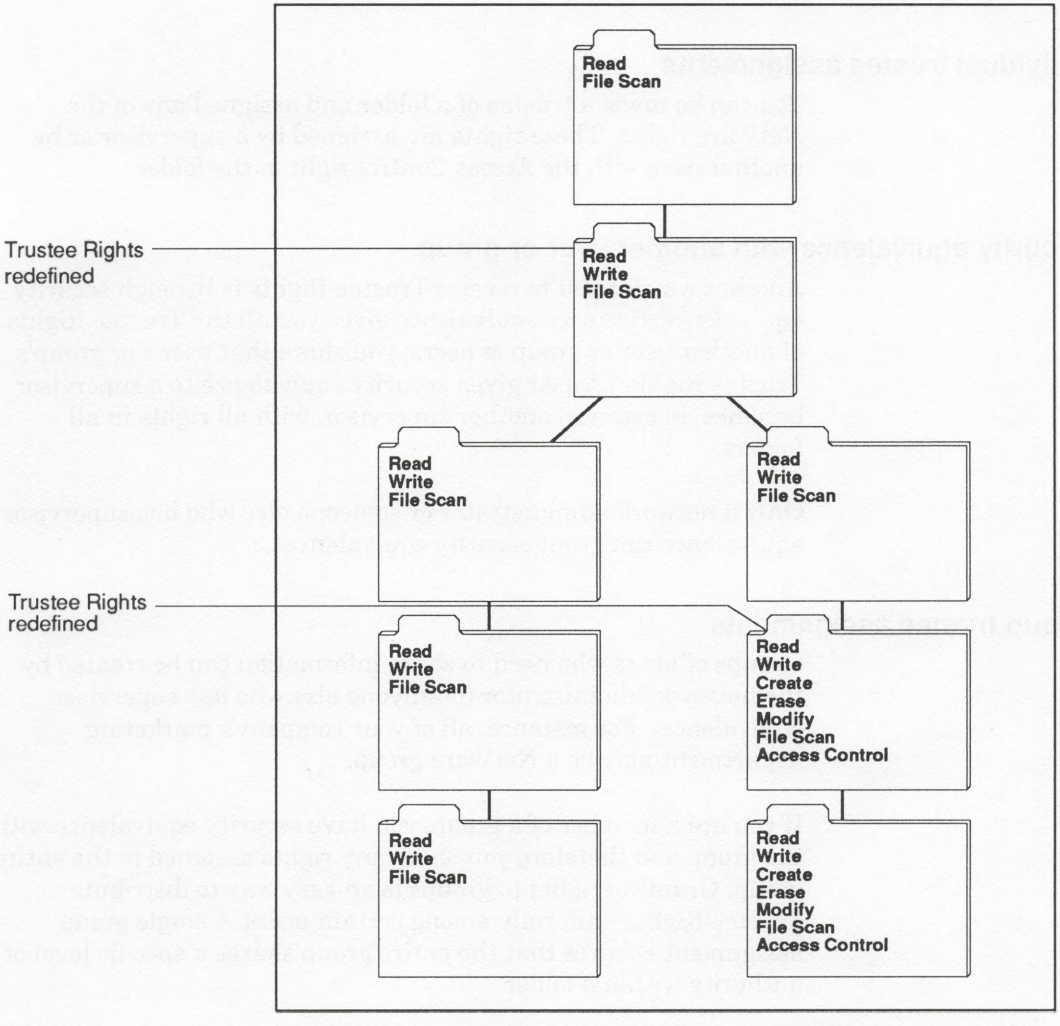


FIGURE 1-1 Trustee Rights are inherited by nested folders

There are four ways you can gain Trustee Rights in a folder:

- Individual trustee assignments
- Security equivalence

- Group trustee assignments
- By inheritance from a parent folder

Individual trustee assignments

You can be made a trustee of a folder and assigned any of the NetWare rights. These rights are assigned by a supervisor or by another user with the Access Control right in the folder.

Security equivalence with another user or group

Another way for you to receive Trustee Rights is through security equivalence. Security equivalence gives you all the Trustee Rights of another user or group of users; you share that user's or group's Trustee Rights. A user given security equivalence to a supervisor becomes, in essence, another supervisor, with all rights in all folders.

Only a network administrator or someone else who has supervisor equivalence can grant security equivalences.

Group trustee assignments

Groups of users who need to share information can be created by the network administrator (or anyone else who has supervisor equivalence). For instance, all of your company's marketing department may be a NetWare group.

If you are a member of a group, you have security equivalence with the group and therefore you share any rights assigned to the entire group. Granting rights to groups is an easy way to distribute Trustee Rights uniformly among certain users. A single group assignment ensures that the entire group shares a specific level of authority within a folder.

Group assignments for a folder are made by a network administrator or a user with the Access Control right.

Receiving rights by inheritance

The fourth way you can receive Trustee Rights in a folder is by inheritance. Unless a folder's rights mask excludes a right, then it is inherited from the effective Trustee Rights you have in the parent folder. You will learn more about Effective Rights and rights masks later in this appendix.

How NetWare calculates Trustee Rights

A user's Trustee Rights in a folder are a combination of all four assignments of rights: individual trustee assignments, security equivalence, group assignments, and inherited Trustee Rights.

If a you have been assigned a right by any of the ways discussed above, then you have that right as part of your Trustee Rights for a folder. Also, trustee assignments extend from the folder where they are made to all of that folder's nested folders (unless they are redefined, or blocked by a folder's rights mask), so that these assignments do not have to be made directly to a folder, but can be made in a parent folder.

For example, suppose the following conditions:

- You are given individual rights Read and File Scan in a folder called SUGGESTIONS [R F].
- You belong to a group called Contributors that has a Group assignment of Write and Create in the folder SUGGESTIONS [W C].
- You have security equivalence with user Sam, who has Erase and File Scan rights in the folder SUGGESTIONS [E F].
- You have inherited the Modify right [M].

Here is how your combined Trustee Rights are calculated in the folder SUGGESTIONS:

Individual trustee assignment	R F
Group trustee assignment	W C
Security equivalence	F E
Inherited Trustee Rights	M
Trustee Rights	R W C F E M

Your combined Trustee Rights allow access rights from a combination of possible trustee assignments.

Maximum Rights Mask and Effective Rights

You can limit a folder's assigned rights without changing Trustee Rights by setting a Maximum Rights Mask for a folder on a NetWare server. The Maximum Rights Mask acts only in the folder where it is set and cannot be inherited by nested folders.

When a folder is created, the folder's Maximum Rights Mask automatically contains all seven rights. When you remove a right from the mask, no user can exercise the right within that folder, regardless of what Trustee Rights the user has been assigned (unless the user has supervisor equivalence, in which case the user has all rights).

A user needs the Access Control right in a folder or in its parent folder in order to change the Maximum Rights Mask. A network

administrator automatically has all rights in every folder, and can change the Maximum Rights Mask of any folder.

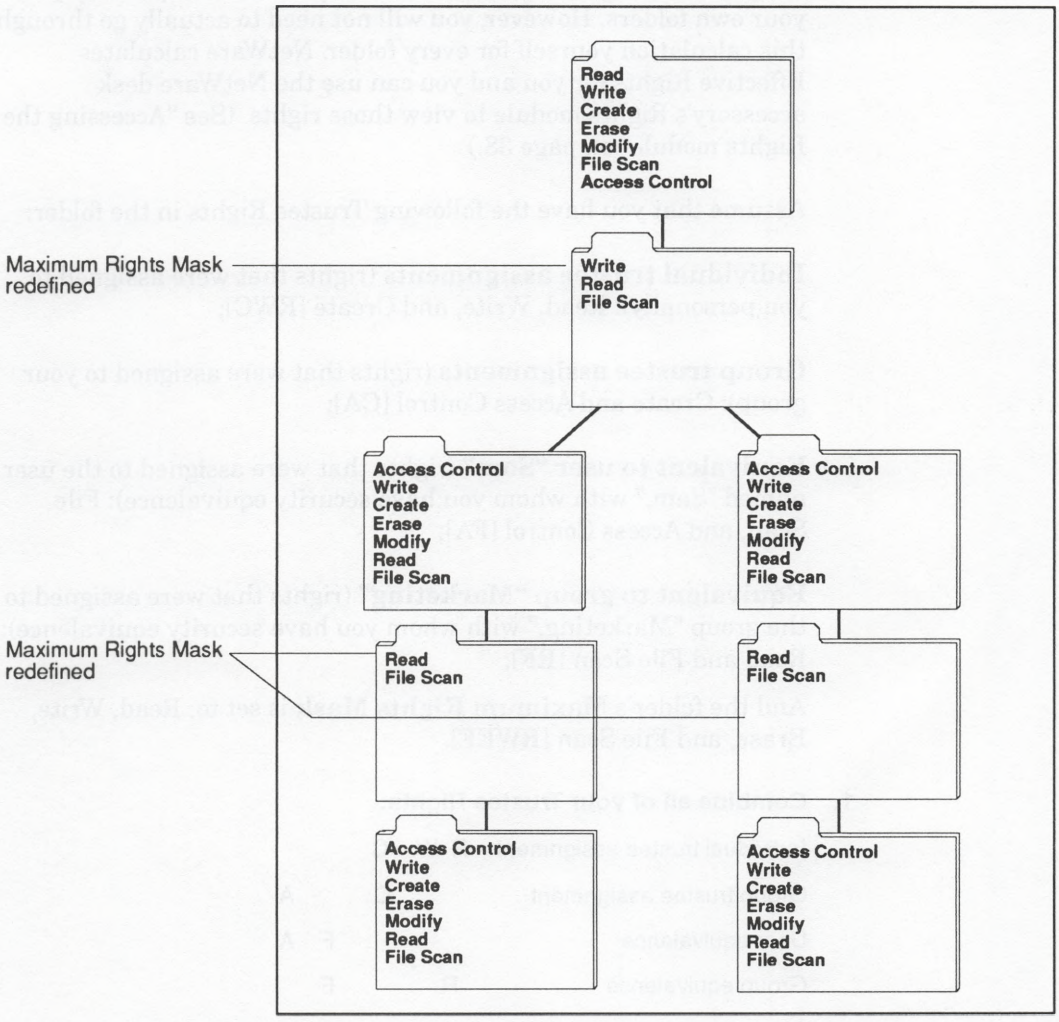


FIGURE 1-2 Maximum Rights Mask affects only the current folder

How NetWare calculates Effective Rights

Your Effective Rights (your actual rights in a folder) are a combination of your rights through trustee assignments and rights allowed in the folder by a rights mask.

Now you will see an example of how NetWare calculates Effective Rights in a folder. This example is intended to help you understand the process of rights calculation so that you can set up security for your own folders. However, you will not need to actually go through this calculation yourself for every folder. NetWare calculates Effective Rights for you and you can use the NetWare desk accessory's Rights module to view those rights. (See "Accessing the Rights module" on page 38.)

Assume that you have the following Trustee Rights in the folder:

Individual trustee assignments (rights that were assigned to you personally): Read, Write, and Create [RWC];

Group trustee assignments (rights that were assigned to your group): Create and Access Control [CA];

Equivalent to user "Sam" (rights that were assigned to the user named "Sam," with whom you have security equivalence): File Scan, and Access Control [FA];

Equivalent to group "Marketing" (rights that were assigned to the group "Marketing," with whom you have security equivalence): Read and File Scan [RF];

And the folder's **Maximum Rights Mask** is set to: Read, Write, Erase, and File Scan [RWEF].

1. **Combine all of your Trustee Rights:**

Individual trustee assignment	R	W	C		
Group trustee assignment			C		A
User equivalence				F	A
Group equivalence	R			F	
Trustee Rights	R	W	C	F	A

NetWare uses the logical "OR" (+) operation to combine Trustee Rights.

2. **Eliminate rights that are excluded in the folder's rights mask:**

Combined Trustee Rights	R	W	C	F
Maximum Rights Mask	R	W		F
Your Effective Rights	R	W		F

NetWare uses the logical "AND" (*) operation to calculate Effective Rights.

Attribute security

Another way NetWare controls file and folder security is with attributes. Attribute security overrides rights granted with trustee assignments and can prevent tasks that Effective Rights would allow. Attributes can be set on folders or files with a Macintosh utility called the NetWare Control Center (NCC); however the Private attribute discussed earlier in this manual is the only attribute that can be set with the NetWare DA's Rights module. Use of the NCC and a description of NetWare attributes can be found in NetWare for Macintosh v2.2 *Installation and Maintenance.*

Appendix B Working on a mixed network

Many local area networks have more than one kind of NetWare server on them. These "mixed nets" may have a combination of servers running under NetWare v2.15, v2.2, or v3.0 or later ("3.x").

NetWare security has evolved over time. NetWare v2.15, NetWare v2.2, and NetWare v3.x each offer diferences in how they handle security. If you are working on a mixed network, it is important that you know how to recognize the kind of server you are logging in to and that you know about the server's security system.

In this appendix you will learn how to recognize the kind of server you have accessed. You will also learn about the security systems for NetWare v2.15 servers and NetWare v3.x servers. Your network administrator can provide you with more information about working on these kinds of servers.

What kind of server are you accessing?

Of course your network administrator can tell you what kinds of file servers are on your network, but there are two ways to tell at a glance what kind of server you are accessing. One is to look at the volume icon. The other is to look at the NetWare DA Right's window.

After you've determined the type of server you're accessing, you can read other sections of this appendix which apply to the server you're working on.

First, check the icon

There are two different NetWare server icons–one for NetWare v2.15 or v2.2 ("2.x")—and the other for NetWare v3.x. By noticing the icon you double-click when you open a volume, you will be able to tell which type of server you are accessing.

NetWare v2.x icon

NetWare v3.x icon

As you can see, the NetWare v.2x icon is a two-drawer filing cabinet; the NetWare v3.x icon is a three-drawer filing cabinet. You cannot tell which particular version of NetWare v2.x is running by looking at a volume icon.

Second, look in the NetWare DA Rights Window

Because different kinds of NetWare servers have different security schemes, the information you see when you look in the NetWare DA Rights window will vary depending on the kind of server you are accessing. (Opening the NetWare DA Rights window is described on page 38.) The figures below show the NetWare DA Rights window for NetWare v2.15, NetWare v2.2 , and NetWare v3.x.

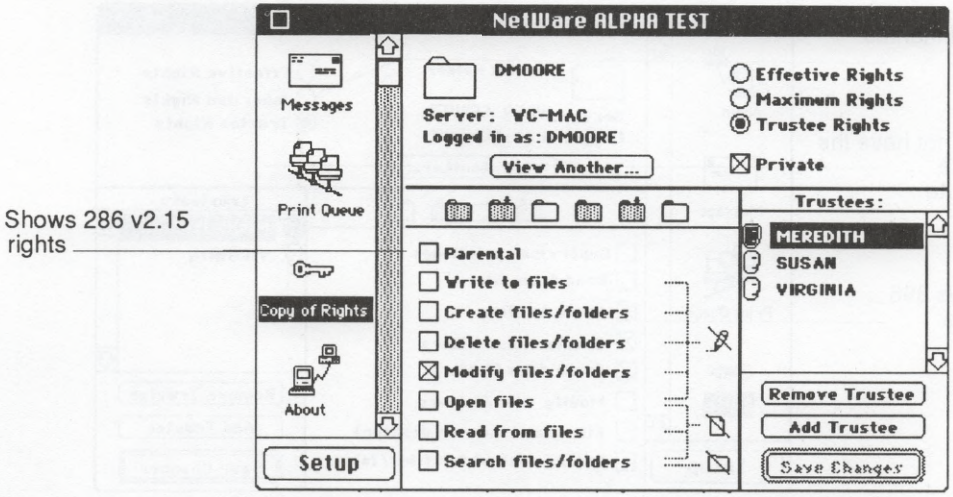


FIGURE 2-1 NetWare DA Rights window, NetWare v2.15

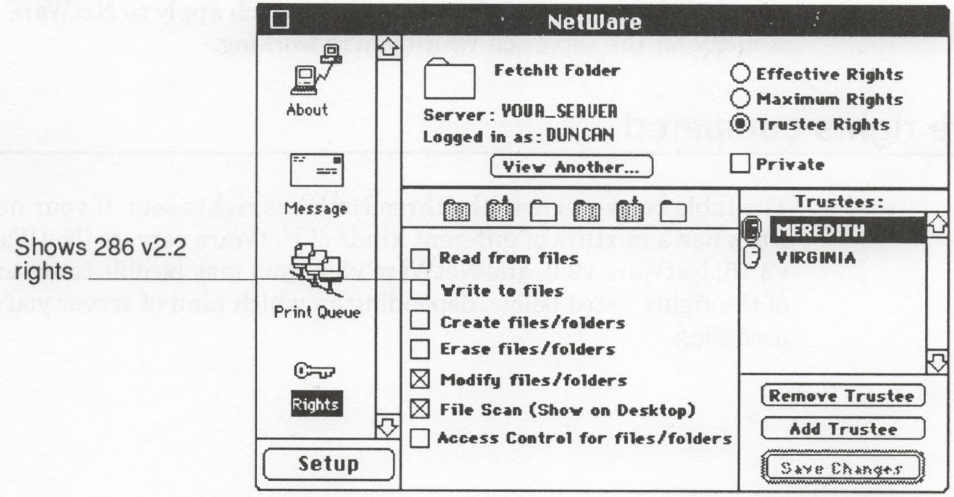


FIGURE 2-2 NetWare DA Rights window, NetWare v2.2

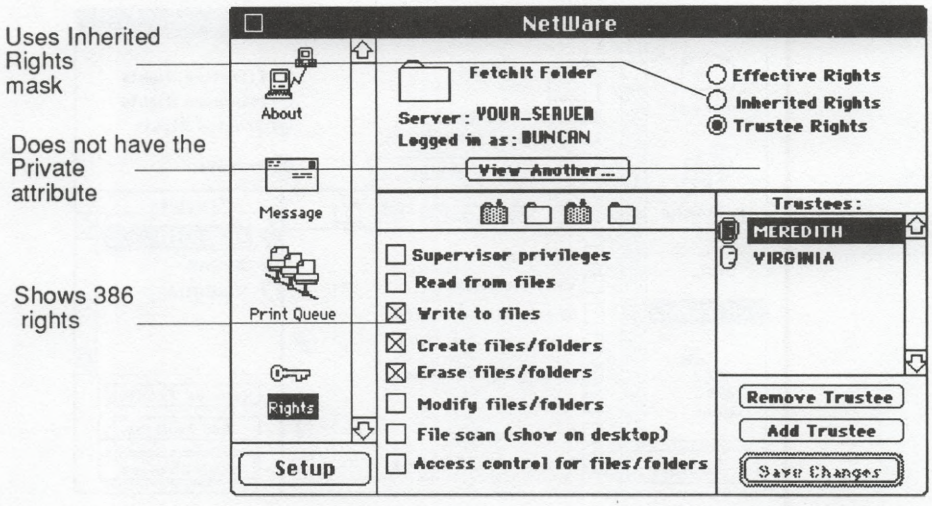


FIGURE 2-3 NetWare DA Right window, NetWare v3.x

Now that you've determined the type of server you're accessing, you can read other sections of this appendix which apply to NetWare security for the server on which you're working.

NetWare rights compared

The table below reviews the three NetWare rights sets. If your network has a mixture of different kinds of NetWare servers (NetWare v2.15, NetWare v2.2, and NetWare v3.x), you may be able to see any of the rights listed below, depending on which kind of server you're accessing.

NetWare v2.15		NetWare v2.2		NetWare v3.x
				Supervisory*
Parental	⇒	Access Control**	⇒	Access Control
Write	⇒	Write	⇒	Write
Create	⇒	Create	⇒	Create
Delete	⇒	Erase**	⇒	Erase
Modify	⇒	Modify	⇒	Modify
Open	⇒	*implicit****	⇒	*implicit*
Read	⇒	Read	⇒	Read
Search	⇒	File Scan**	⇒	File Scan

*This is a new right. It grants all rights in a folder.

**Name changed from NetWare v2.15.

***The Open right is implicitly granted with Read, Write, or Create.

Differences between v2.15 and v2.2 of NetWare security

Essentially, the security schemes for these two versions of NetWare security are the same. However, there are a few differences:

- Unlike v2.15, NetWare v2.2 does not require that you set the Open right when you set Read, Write, or Create in a folder. Instead, Open is granted implicitly whenever you set one of those rights. This means that if you are working on a NetWare v2.15 server, you will need to set the Open right explicitly whenever you want to give another user Read, Write, or Create rights.
- Also, you should note that names of some of the rights are changed from v2.15 to v2.2. The Parental right becomes the Access Control Right, and Search becomes File Scan. These are changes in name only and do not affect the way these rights work.

Differences between NetWare v2.x and NetWare v3.x access rights

NetWare v3.x contains the following differences from both v2.15 and v2.2 of NetWare with respect to how access rights operate:

- A major change is that NetWare v3.x access rights can be applied to files (as well as folders).

- A new and important right, Supervisory, allows all rights in the folder and cannot be masked out with the Inherited Rights mask. (The Inherited Rights Mask is described on page 83.) Users with the Supervisory right on the file or in the folder can grant others any right on the file or in the folder, including the Supervisory right.
- With NetWare v3.x, you can see a folder only if you have at least one right granted in it or in one of its nested files or folders. Otherwise, the folder is invisible. (This contrasts with NetWare v2.x, where the folder is gray if you do not have rights in it.)

The remainder of this appendix gives an overview of NetWare v3.x security and emphasizes how it is changed from NetWare v2.x. If you require more information, see your network administrator for the NetWare v3.x *Concepts* manual, which contains a more thorough discussion of NetWare v3.x security.

NetWare v3.x security

Many of the basic concepts of NetWare v3.x security are the same as those used in NetWare security prior to v3.0. However, NetWare v3.x provides some important changes from NetWare v2.x in its security scheme:

- Among the changes to access rights is the fact that in NetWare v3.x access rights can be applied to files, as well as folders.
- The NetWare v2.x Maximum Rights Mask is replaced by the NetWare v3.x Inherited Rights Mask. See "NetWare v3.x: Inherited Rights Mask and Effective Rights" on page 83.
- When you access a NetWare v3.x server, you will not see any gray folders. This is because there is no Private folder attribute in NetWare v3.x. With NetWare v3.x, if you have no access rights to a folder, the folder is invisible.

NetWare v3.x controls access rights on individual files

The eight NetWare v3.x access rights can be applied to files as well as folders. The rights function on files just as they do on folders, with the following exceptions:

- The Create right allows the user to salvage a deleted file with the SALVAGE utility (executed from a DOS console).
- When applied to files, File Scan grants the right to see the filename when viewing a folder's contents.

NetWare v3.x: Inherited Rights Mask and Effective Rights

In place of the NetWare v2.x Maximum Rights Mask, NetWare v3.x uses an Inherited Rights Mask. The Inherited Rights mask works differently than its NetWare v2.x counterpart:

- Not only can Inherited Rights Masks be set for folders, but a separate Inherited Rights Mask can be set for each file in a folder. (In NetWare v2.x, a rights mask cannot be set for files.) Setting an Inherited Rights Mask on a file allows you to quickly restrict rights to the file, instead of having to the restrict Trustee Rights of each user who might access the file.
- If a user is granted new Trustee Rights in a folder, they override the folder's Inherited Rights Mask and the parent folder's Effective Rights, unless the user has the Supervisory right in the parent folder, which automatically allows all rights in the folder. (In NetWare v2.x, the Maximum Rights Mask always overrides whatever trustee assignments are made in the folder.)

How NetWare v3.x calculates Effective Rights

This section describes how the Inherited Rights Mask and Trustee Rights are combined to create a user's Effective Rights in a folder.

Because a folder at the root of a volume cannot inherit any Trustee Rights from a parent folder—there are, by definition, no folders "above" it—new Trustee Rights granted in such a folder become your Effective Rights. If you have no trustee assignments in such a

folder, then you have no Effective Rights unless you have supervisor equivalency, in which case, you would have all rights in all folders.

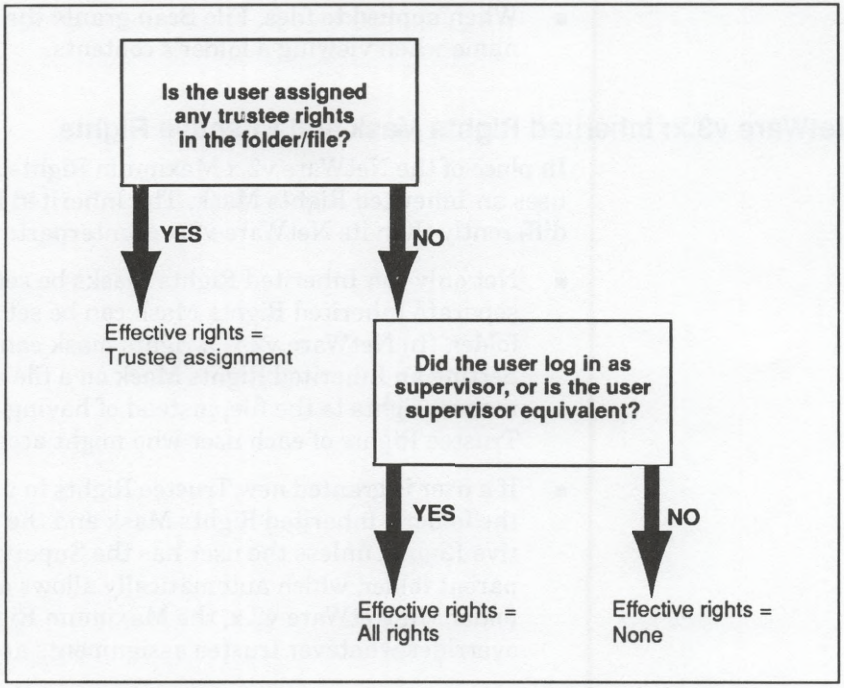

Is the user assigned any trustee rights in the folder/file?
YES
NO
Effective rights = Trustee assignment
Did the user log in as supervisor, or is the user supervisor equivalent?
YES
NO
Effective rights = All rights
Effective rights = None

FIGURE 2-4 Effective Rights on a folder at the root of a volume

For all other folders (that is, those that are more than one level below the root), you need to answer these questions to determine Effective Rights in a folder:

- Is the Supervisory right in effect in the folder (or its parent)? If the answer is "yes," then your Effective Rights in the folder are all the NetWare rights.

- If you answered "no" to the first two questions, then your Effective Rights in the folder are the same as those in the folder's parent minus any rights revoked by the folder's Inherited Rights Mask.

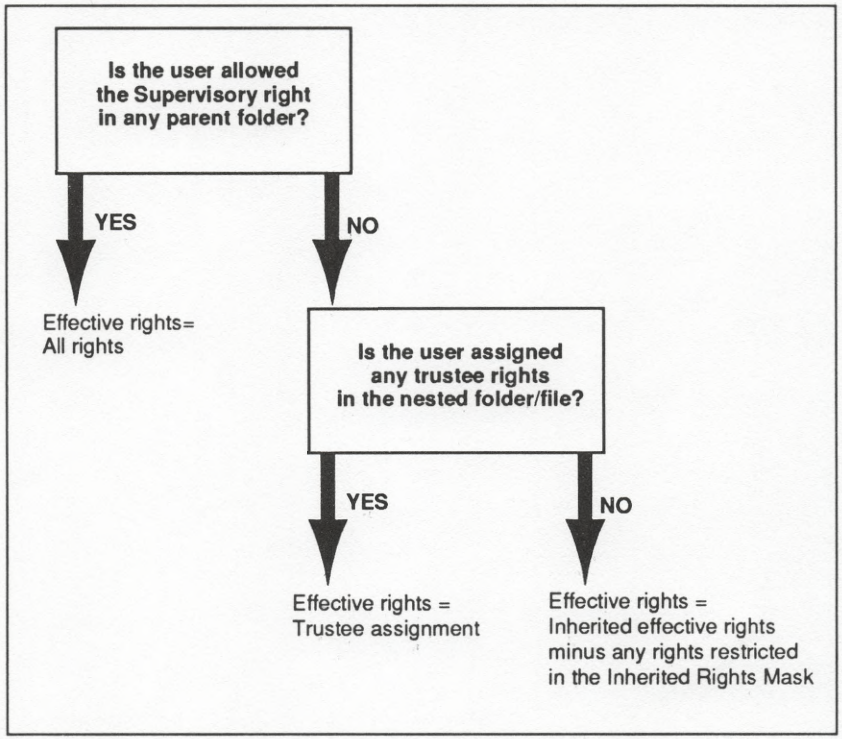
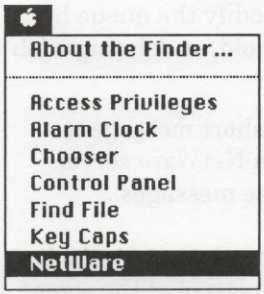

Is the user allowed the Supervisory right in any parent folder?
YES
NO
Effective rights= All rights
Is the user assigned any trustee rights in the nested folder/file?
YES
NO
Effective rights = Trustee assignment
Effective rights = Inherited effective rights minus any rights restricted in the Inherited Rights Mask

FIGURE 2-5 Effective Rights on nested folders

Appendix C Installing the NetWare DA



This appendix describes how to install the NetWare desk accessory (DA), its modules, and the Notify INIT. To see if the DA is installed, look for NetWare under the Apple (🍎) menu.

If the network administrator has placed the NetWare DA, its modules, and the Notify INIT on a file server, you can copy the DA and the Notify INIT to your local disk for installation. The modules can remain on the file server or you can copy them to your local disk.

If the NetWare DA and its related software are not available on the file server, you need to get a copy of the *NetWare for Macintosh Utilities* diskette from the network administrator.

NetWare desk accessory (NetWare DA)

NetWare DA

The NetWare DA is a Macintosh desk accessory that consists of a System document (the DA itself), an "About" module, and three program modules. A start-up document (an INIT) is also required for you to receive messages from other users, the file server console, or the NetWare system.

The NetWare DA is intended for all Macintosh users, although some of its functions require supervisor rights on the server. When you invoke the desk accessory for the first time, it looks in the Macintosh System folder for its modules. If it doesn't find them there, the DA prompts you to click the Setup button and enter the path to their location. The location you specify is remembered in subsequent Macintosh system reboots.

About

The NetWare DA modules are as follows:

- The About module provides a basic description of the NetWare DA.

Rights

- The Rights module displays NetWare rights for volumes and folders on a server running NetWare v2.15 or v2.2, or NetWare rights for volumes, folders, and files on servers running NetWare v3.0 and later. The administrator (or user with proper rights) can make security modifications with the Rights module.

Print Queue

- The Print Queue module allows you to view print jobs in a NetWare queue. Administrators, users who are supervisor equivalent, and print queue operators can also modify the queue by rearranging job priorities, placing jobs on hold, or deleting a job from the queue.

Message

- The Message module allows you to send a short message to another NetWare user who is logged in to a NetWare server. The Notify INIT polls for and displays these messages.

Notify

The Notify INIT must be copied into the Macintosh System Folder. The Notify icon will then appear briefly at the bottom of the screen when the Macintosh starts up. (Holding down the mouse button or the "N" key will prevent the INIT from loading. The Notify icon will then have an "X" over it.) This INIT polls for the receipt of brief messages from other NetWare users and from the NetWare console (for example, "Server going down..."). When the Notify module receives a message, it displays the message on the Macintosh screen.

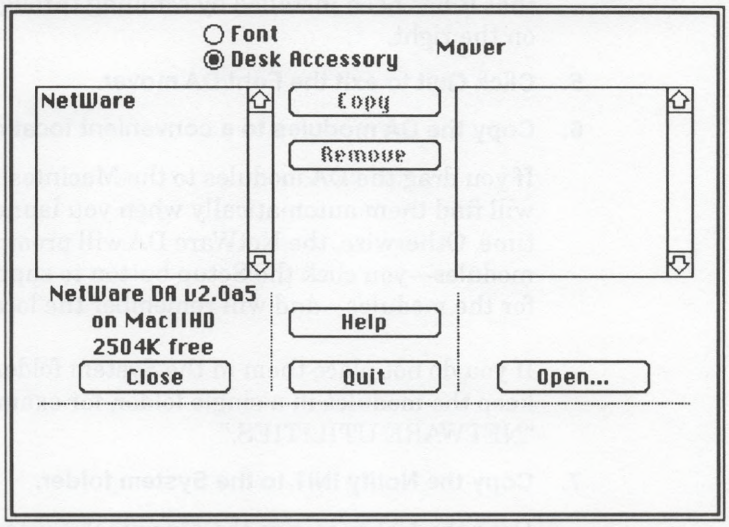
Installation procedure

Follow these steps to install the NetWare DA and its modules:

NetWare DA

1. **Double-click the NetWare suitcase icon to launch the Font/DA mover.**

Make sure the word "NetWare" appears in the window on the left.

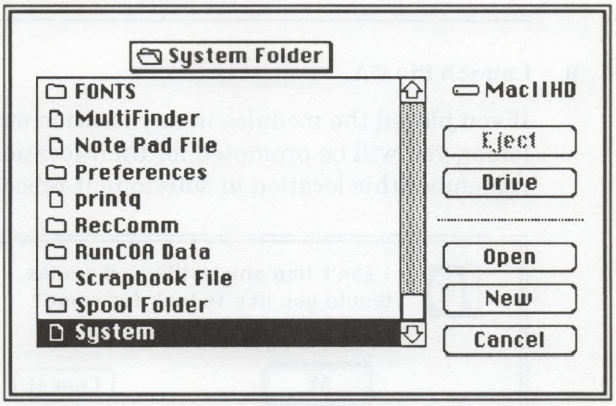


2. **Click the Open button under the window on the right.**

   A folder dialog box will appear.

3. **Click the Drive button until you see your start-up disk.**

   Double-click your System folder to open it. Double-click System to open your System file.



4. **Select NetWare in the window on the left and click the >>Copy>> button.**

The NetWare DA will be installed in the Macintosh system. Check that it has been installed by scrolling through the system window on the right.

5. **Click Quit to exit the Font/DA mover.**

6. **Copy the DA modules to a convenient location.**

   If you drag the DA modules to the Macintosh System folder, the DA will find them automatically when you launch the DA for the first time. Otherwise, the NetWare DA will prompt for the location of the modules—you click the Setup button to supply the correct location for the modules—and will remember the location you specify.

   If you do not place them in the System folder, it is simplest if you keep the modules in a single folder, for example, one called "NETWARE UTILITIES."

7. **Copy the Notify INIT to the System folder.**

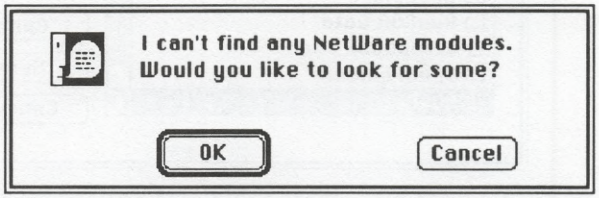
   Drag the Notify icon to the Macintosh System folder. Notify allows the Macintosh user to receive messages with the NetWare DA's Message module.

Note: If you are running Multifinder, you will need to restart your Macintosh before you can select NetWare from the Apple (🍎) menu.

---

8. **Launch the DA.**

   If you placed the modules in any location other than the System folder, you will be prompted for their location. NetWare will remember this location in subsequent reboots.



Appendix D DOS file naming conventions

When a DOS user logs in to a NetWare file server and views folders and files you created from a Macintosh, any Macintosh file names that do not follow DOS conventions will be truncated or otherwise modified to allow DOS users to see them. This can cause confusion when you are referring to the file, or when DOS users change the file name to make it more sensible from the DOS point of view.

This appendix explains how to name your Macintosh files so that the names will not change at a DOS workstation.

How to name your files to follow DOS conventions

If you want your file names to be the same to someone who is using either a Macintosh or DOS machine, follow these conventions for naming files and folders that you create on your Macintosh:

- Use a maximum of eight characters for the name followed by an optional period (.) and a one- to three-character extension. You must use the period if you want to supply an extension.
- Do not use any of these characters:

  . " / \ [ ] : | < > + = ; ,

For example, the file names

```
myfolder.txt
```

```
myfile
```

will appear exactly the same to DOS users, while the file names

```
Folder for text
```

```
This is my file, dude
```

will be converted to DOS conventions, as described below.

How NetWare converts Macintosh file names to DOS file names

When a Macintosh file or folder is displayed in a DOS directory, the following rules are used for naming it:

1) If there is no period in the file name, the first eight valid characters are displayed in uppercase letters without spaces (invalid characters are shown above). For example, the Macintosh file name

   ```
   This is my file, dude
   ```

   becomes the DOS filename

   ```
   THISISMY
   ```

   and the Macintosh filename

   ```
   My**!!Letter
   ```

   becomes the DOS filename

   ```
   MYLETTER
   ```

   (Note that the invalid characters * * ! ! are omitted.)

2) If the Macintosh filename contains a period, DOS interprets it as a separator between the filename and an extension and lists the first three valid characters after the period as an extension. For example, the Macintosh file name

   ```
   Mrs. Elmer Fudd
   ```

   becomes the DOS filename

   ```
   MRS.ELM
   ```

3) To prevent files from having the same name, DOS numbers files to avoid duplicate names. For example, the Macintosh file names

   ```
   My. File
   My. Files
   ```

   will become the DOS file names

   ```
   MY1.FIL
   MY2.FIL
   ```

How NetWare displays DOS files on your Macintosh desktop

FILENAME.EXT

When you create files on a DOS workstation, upload them to a NetWare server, and then view them from a Macintosh, the following rules are used for naming it:

1) The word DOS appears in the document icon.
2) All letters in the filename are converted to upper case.

The icon in the left margin shows an example of a DOS filename as it would appear on your Macintosh.

Glossary

About module A module accessed through the NetWare desk accessory. The About module provides general information about the desk accessory and all of its modules.

Activity indicator Two arrows displayed in the upper left-hand corner of the monitor, to the left of the Apple (). These arrows blink to indicate network activity, for example, when you are copying a file to a server.

Access control A security right in NetWare v3.x that allows users to make trustee assignments to other users. A user with this right in a volume, folder, or file can grant any right except Supervisory to other users. This right replaces the Parental right in NetWare v2.x.

Access privileges An AppleShare term that describes the privileges to open and make changes to folders and their contents; they are given to or withheld from users. By setting access privileges, you can control access to confidential information stored in folders on a server.

AppleTalk network Apple Computer's networking system, which ties Apple Macintosh computers together to share disk storage and printer resources. The network is controlled through the AppleShare file server.

Attributes These are special properties that can be assigned to a folder or file. Attributes override rights granted with trustee assignments and can prevent tasks that Effective Rights would allow. For example, attributes can prevent copying a file, or deleting a file or folder. Attributes can only be set from the Macintosh with the NetWare Control Center, which is documented in *NetWare for Macintosh Installation and Management.*

Black tab folder A folder in which the user has the Parental right (NetWare v2.x) or the Access Control right (NetWare v3.x) and can therefore modify the folder's security.

Bulletin board A folder in which a trustee is given rights to open, search, and read files, but not to make any changes.

Can't make changes An AppleShare privilege represented by an icon in the form of a crossed-out pencil. The icon indicates that you can't write to files within the folder where the icon is displayed.

Can't see documents An AppleShare privilege represented by an icon in the shape of a crossed-out file. The icon indicates that you can't read any files in the folder. Depending on your rights, you may be able to see the filenames, but you can't open the files.

Create right The right given to a user or group of users to create new files and folders. In NetWare v2.x, the Parental right, as well as Create, are needed to create a nested folder. With NetWare v3.x this is not the case.

Delete right A NetWare v2.15 security right that allows users to delete files and folders in a given folder (called the Erase right in NetWare v2.2 and later).

Desktop Your working environment on the Macintosh—the menu bar and the gray area on the screen. You can have a number of documents on the desktop at the same time. At the Finder level, the desktop displays the Trash and the icons (and windows) of disk that have been accessed.

Drop box folder Represented by a gray folder with a black arrow above it, a drop box folder is one in which a user has the following rights Read, Open, Create, and Write. The user can create a file and copy it into the folder, but cannot delete files in the folder or search the folder.

Effective Rights The rights a user can exercise in a folder. The combination of Trustee Rights a user has in a folder, and rights specified in the folder's rights mask determine Effective Rights.

Erase right A NetWare security rightin v2.2 and later that allows users to delete files and folders (called the Delete right in NetWare v2.15).

File A collection of data stored as one unit, under a folder. A file may contain many separate items (for example, names, addresses, formulas), continuous text, or an application program. Files are

stored in folders, either on a local floppy or hard disk, or on the file server's hard disk.

File Scan right A NetWare right in v 2.2 and later that allows a user to see filenames and nested folders. This replaces the NetWare v2.15 Search right. If File Scan is granted in a nested folder, the user automatically has the right to see that folder. Previously with the NetWare v2.15, the user needed the Search right in all folders above the nested folder in order to see it.

File server A computer that controls network activity. The NetWare Operating System is loaded into the file server, and all shareable devices (disks, printers, and so forth) are attached to it. The file server controls all access to shared devices and the system security.

Folder A holder of documents, files, applications, or other folders on the Macintosh desktop. In DOS-based systems a folder is called a directory.

Gray folder When a folder icon displayed in the finder is gray, the folder cannot be opened by the user. Files cannot be copied from the folder, but they can be copied into the folder if there is an arrow above the folder icon. Gray folders without black tabs do not exist on a NetWare v3.x server. On a NetWare v2.x server, such folders indicate that the Private attribute is set.

Group trustee Access rights to folders given to an entire group of users.

Guest A user name created automatically when the network is installed. By default, GUEST has no password and limited rights. The purpose of GUEST is to allow a user without a registered user name to log in to the network. The supervisor can change the rights of GUEST, or remove the user name entirely.

Inherited Rights Mask A NetWare v3.x security feature. The mask controls which rights users can inherit by revoking rights that have been deleted from the mask. The folder Inherited Rights Mask controls which parent directory rights can be exercised in the folder. The file Inherited Rights Mask controls which folder rights can be exercised on the file.

Local area network A group of computers connected for the purpose of sharing resources. The computers on a local area network (LAN) are typically joined by a single transmission cable and are located within a small area such as a single building or section of a building.

Login privileges The right to log in to a NetWare server.

Maximum Rights Mask A security feature in NetWare v2.x that controls the rights that all trustees can exercise in a folder. If a particular right is removed from a folder's rights mask, no user will be able to exercise that right in that folder, even if the user has that trustee right.

Message module The Message module is accessed through the NetWare desk accessory. It allows network users to send and receive short messages.

Modify right The right given to a user or group of users to change filenames and file flags in a particular folder. With NetWare v2.x the Parental right is required to modify file and folder names. With NetWare v3.x no additional rights are required.

Mount To install a file system onto the directory hierarchy. With NetWare, you mount a volume on your desktop so that you can open it and work in it.

NetWare v2.x A shorthand way of referring to either NetWare v2.15 or NetWare v2.2, or both.

NetWare v3.x A shorthand way of referring to NetWare v3.0 or later.

NetWare DA (desk accessory) A desk accessory that allows users to access the About, Rights, Message, and Print modules.

Network A collection of computers connected to allow users to share data and peripherals (such as hard disks and printers). A NetWare network consists of one or more file servers, workstations, and peripherals.

Network administrator The person who is responsible for setting up and maintaining the network. The network administrator has supervisor login privileges and administers security on the network.

Open right A security right in NetWare v2.15 and earlier that allows the user to open a particular folder. A trustee who has Read and Write rights, as well as the Open right, can view and change the contents of the folder.

Parental right A security right in NetWare v2.15 and earlier that allows users to assign Trustee Rights in a folder and add or remove trustees from a folder. The Parental right is symbolized by a folder icon with a black tab.

Password A NetWare login security feature. Each registered user can be assigned a password up to eight characters in length. Passwords uniquely identify each user to the system and prevent users from logging in under the same name, or from gaining unauthorized access to the system.

Plain folder A white folder icon with no markings. When a plain folder appears in the Finder, it means you can open the folder and see the names of the folders and files inside. You may or may not be able to create, delete, or modify files, depending on other rights assigned in the folder. The plain folder is equivalent to the search right.

Print queue A sequence of print job requests stored and processed in the order they are received while they await servicing by a printer.

Print queue operator A printing supervisor with rights to create, manage, disable, and re-enable print queues. A print queue operator can also authorize a print server to service a queue. The supervisor is print queue operator by default. However, the supervisor (or anyone who is supervisor equivalent) can also delegate print queue operator responsibility to other users.

Print queue module A module that is accessed through the NetWare desk accessory. The Print module allows users to view NetWare queue. Print queue operators and anyone who is supervisor equivalent can use the Print module to modify NetWare print queues.

Private attribute A feature of NetWare v2.x security that prevents unauthorized users from viewing the contents of a folder. A private folder is closed to all users except those who have the Search right in that folder. You must have the Parental right in either the folder you are making private or its parent folder.

Read right The right to read from open files in a particular folder. In NetWare v2.x the Read right is meaningless without Open and Search. In NetWare v3.x, Open and Search are not needed to Read a file.

Rights Privileges, assigned by the network supervisor or by a user with the Parental right, that control how users can work with files in a given folder. Trustee Rights are assigned to individual users, and control each user's rights within folders. A Maximum Rights Mask is assigned to each individual folder and restricts the rights of all users in the folder, overriding the individual rights of trustees.

Rights mask See Inherited Rights Mask and Maximum Rights Mask.

Rights module A module accessed through the NetWare desk accessory that allows users to view and modify security information for users, groups, servers, volumes, folders, and files.

Search right A security right in NetWare v2.15 and earlier that allows users to list the file names in a folder. You may or may not be able to view or modify the contents of the files, depending of other assigned rights. Without the Search right, if the folder is private, the folder icon in the Finder will be gray. (File Scan is the equivalent NetWare v3.x right.)

Security A data protection scheme that controls users' abilities to access and work with folders and files on the network and prevents unauthorized persons from accessing the network.

Security equivalence A NetWare security feature that allows one user to exercise the same rights as another user or group of users. Assigning rights with security equivalence is often easier and more efficient than assigning rights directly to individual users.

Supervisor Anyone who can log in with the user name supervisor. Typically this is the system administrator, but it can be any user. Anyone with supervisor login privileges can administer network security and perform other administrative tasks to maintain the system.

Supervisory right (NetWare v3.x only) This right grants all rights to a file or folder and overrides any restrictions made with an Inherited Rights Mask. Users with the Supervisory right in a file or folder can grant others any right in the file or folder, including the Supervisory right.

Trustee A user who has been given rights in a particular folder is a trustee of the folder. See also Trustee Assignments.

Trustee assignments The assignment of trustees with a set of rights that control which folders and files a user or group can access and what work a user or a group is allowed to do with them. A trustee assignment consists of the rights assigned to a particular user or group. A user or a group with assigned rights to work in a folder or file is known as a "trustee" of that folder or file.

User A person who logs into the network.

User name A name recognized by the network, with which a user gains access to the network. Each user is a assigned a user name and (usually) a password for logging in.

Volume A hard disk, or portion or a hard disk. Storage on a volume is divided into three hierarchical levels: volumes, folders, and files. The system supervisor will create the volumes for the file server's disk, and users can choose each volume they need to work with.

Volume icon In NetWare, a volume is represented by an icon that looks like a filing cabinet.

Work area A folder dedicated to a user as a personal work area. The user will have all access rights to the folder and can grant others Trustee Rights in the folder.

Workstation A personal computer connected to a network. Each user on the network logs into the file server through his or her workstation, and each workstation functions as a stand-alone computer except when using the network's shared resources.

Write right A NetWare right that allows users to change the contents of an open file. In NetWare v2.15 Write is meaningless without the Search and Open rights; the Search right allows the file to appear in the Finder, and the Open right allows the user to open a file. In NetWare v2.2 and later, the Open right is not needed.

Zones A logical grouping of AppleTalk devices such as Macintoshes, Apple printers, and NetWare file servers. The network administrator defines AppleTalk zones and can assign devices to a particular zone.

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